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HOW MANHATTAN IS GOVERNED

ILLUSTRATED WITH 58 PHOTOGRAPHS AND DRAWINGS

152



FACTS YOU SHOULD KNOW ABOUT THE
ADMINISTRATION OF THE BOROUGH OF MANHATTAN

PREPARED AND PUBLISHED
BY
THE BUREAU OF CITY BETTERMENT
OF THE
CITIZENS UNION OF THE CITY OF NEW YORK.

1906

PRICE, 25 CENTS

JUN 9 1932

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THE BUREAU OF CITY BETTERMENT

CITIZENS UNION

254 Fourth Avenue, New York.

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JUN 9 1932

CONTENTS.

1. Digest.
2. Introduction.
3. Borough President: Historical Statement.
4. Chart of Organization.
5. The Borough President and His Staff.
6. Financial Statement of the Borough of Manhattan.
7. Bureau of Highways.
8. Purchase of Supplies Without Contracts.
9. Bureau of Public Buildings and Offices.
10. Public Baths in Manhattan and Brooklyn.
11. Bureau of Sewers.

DIGEST.

I. Introduction.

1. The pamphlet relates to the administration of the Borough of Manhattan 1904-1905.
2. The pamphlet presents facts relative to the administration of the borough and offers suggestions for improvement along specific lines.

II. History of the Office of Borough President.

1. Established by charter, 1897. Borough president member of board of public improvements with vote limited to matters affecting his borough.
2. Powers extended by charter of 1900 and abolition of board of public improvements; made member of the Board of Estimate and Apportionment and given control of public works in his borough.

III. Biographies.

1. John F. Ahearn, President of the Borough of Manhattan, 1904—
 - a. District leader in Tammany Hall; holder of public office the greater part of his life; politician of local power.
 - b. Selects as his aides associates in practical politics; makes allegiance to his political organization the test for promotion among his subordinates.
 - c. Member of the Assembly and Senate for many years; advocate in the Legislature of measures in behalf of the teachers and firemen of New York City; sponsor in the Legislature for many objectionable measures.
2. William Dalton, Commissioner of Public Works.
 - a. District leader in Tammany Hall; holder of many public offices; carpenter and butcher by trade; sponsor as commissioner of Water Supply for Ramapo scheme.
 - b. Technically incompetent to administer bureaus charged with public works.
3. Bernard Downing, Secretary of the Borough of Manhattan.
 - a. Popular young man on the East Side.
4. John V. Coggey, Superintendent of Sewers.
 - a. District leader in Tammany Hall; dry goods clerk; machine politician; alderman.
5. George F. Scannell, Superintendent of Highways.
 - a. District leader in Tammany Hall; practical politician and office holder.
6. William H. Walker, Superintendent of Public Buildings and Offices.
 - a. Contractor; politician.
7. Edward S. Murphy, Superintendent of Buildings.
 - a. Member of Tammany Hall; contractor.

IV. Finances of the Borough President.

1. Budget appropriation for:

1902-1903	\$3,447,999.53
1904-1905	3,994,094.01

2. Street improvement fund for assessment work:

1902-1903	\$ 917,136.23
1904-1905	1,333,384.09
3. Stock issues:

1902-1903	\$7,904,332.27
1904-1905	4,287,020.00
4. Special Revenue Bond Issues:

1902-1903	\$350,500.00
1904-1905	628,650.00
5. Analysis of the payroll of the office of the borough president, June 1, 1906, showing:
 - a. A total of 2,004 employees and an estimated annual payroll of over \$2,000,000.
 - b. Average term of service of civil service employees under the borough president, 7.66 years.

V. Bureau of Highways.

1. The most important bureau under the borough president.
 - a. Value of Manhattan pavements many millions of dollars.
 - b. Condition of the pavement bears directly upon health.
 - c. Defective pavements expose city to suits for damages.
2. Asphalt pavements.
 - a. President Ahearn revised asphalt specifications, limiting the material available for asphalt pavement in Manhattan to two or three cements.
 - b. This restriction has not affected the price of asphalt; price in 1905 lowest in five years.
 - c. Prices in various cities in 1905.
 - d. Long guarantee results in increased initial price.
 - e. Guarantee period reduced in Manhattan.
 - f. Possible that asphalt specifications are not fulfilled by paving companies; bureau of highways in no position to determine.
 - g. 427.90 miles of paved streets in Manhattan.
 - h. Statement showing kinds of pavement and amounts.
 - i. The several kinds of material used in paving.
 - j. Table of yardage and mileage of pavement in the borough of Manhattan for five years.
 - k. Table showing amounts of pavements contracted for by President Ahearn; number of contracts, 104; mileage of pavement laid, 20.53; amount expended, \$1,050,627.90; this information published for the first time.
 - l. Impossible to determine cost of engineering supervision of paving from books kept by borough president's office.
 - m. \$8,000,000 appropriated for pavements, new and repaired, from 1902-1905, inclusive.
3. The maintenance of pavements.
 - a. Method of maintaining pavements described in detail.
 - b. No explanation found for the ten-year maintenance provision in the case of wood block pavement.
 - c. The borough of Manhattan has no plant for repairing asphalt pavement; repairs made by contract.
 - d. Repairs guaranteed only during term of contract; contracts made year by year; price in 1906, 75c. per square yard.
 - e. Problem of keeping pavements in good condition a difficult one.
 - f. Bureau of highways responsible for damage to pavements caused by cuts made by plumbers and others than city departments and public service corporations.

- g. Cost covered by permits to open pavements issued by the bureau of highways.
- h. Public service corporations responsible for restoration of opened pavements.
- i. In 1904, 87.90 miles; in 1905, 108.72 miles of pavement opened by plumbers, public service corporations and city departments.
- j. Summary of pavements opened for four years.
- 4. Pipe Galleries.
 - a. Streets in Manhattan cannot have good pavements so long as the street surfaces are constantly disturbed to gain access to sub-surface pipes and conduits.
 - b. Solution of this problem found in pipe galleries.
 - c. To supply pipe galleries would involve enormous expenditures of public money.
 - d. Less pressing than the provision of adequate transit facilities; nevertheless important to provide pipe galleries in connection with all future underground railway systems.
 - e. Pipe galleries discussed in detail.
 - f. Pipe galleries and the Rapid Transit Act; rapid transit railroad commissioners given power to build pipe galleries in connection with all new subways.
- 5. Corporation Inspectors.
 - a. City employees paid by corporations to inspect corporation work.
 - b. Anomalous and unsatisfactory method of enforcing municipal regulations with respect to the laying of conduits; unbusiness-like and unprofitable method of dealing with the problem of paving restoration.
 - c. Office of corporation inspector valuable as a vehicle for patronage.
- 6. Condition of pavement in streets below 14th Street as shown by inspection made by Bureau of City Betterment.
 - a. 42% of blocks in streets under maintenance contract found in poor condition.
 - b. 65% of blocks in streets not under maintenance contract found in poor condition.
 - c. Results of investigation reported to the bureau of highways.
- 7. Maintenance of macadamized streets.
 - a. 18 miles of macadam roadways maintained by the bureau of highways.
- 8. Incumbrance of highways.
 - a. Conflict in charter provisions; department of street cleaning and borough president charged with keeping the highways free from incumbrances; no adjustment of responsibility between these two departments.
 - b. Permits issued by bureau of incumbrances to builders and others.
- 9. Incumbrance principle stretched to a dangerous degree
 - a. 'L' erected by Pennsylvania Railroad Company in 32d Street, from 9th Avenue to the North river, under permit issued by borough president.
- 10. Abandoned car track incumbrances.
 - a. Abandoned street railway tracks are conspicuous and detrimental incumbrances of the public highways.
 - b. Merchants Association estimated that in 1903 there were 20 miles of these tracks in the streets of Manhattan.
 - c. The borough president inactive with respect to the removal of unused car tracks.

11. History of the Amsterdam Avenue track fight.
 - a. Reasons why tracks should now be removed.
 12. Pavement in railroad area.
 - a. Railroads obliged by statute and franchise provisions to keep pavement in space within and about rails in repair.
 - b. An investigation made by the Bureau of City Betterment revealed the fact that in 70% of the city blocks in which car tracks are laid the railroad area is paved with stone block.
 - c. Suits for \$720,000 for pavement laid in the railroad area in Manhattan, by the city, now pending.
 - d. The railroad area in 55% of city blocks in which car tracks are laid in bad repair in June, 1906.
 13. Street signs.
 - a. No uniform method of indicating the names of streets in Manhattan; bewildering multiplicity of signs in use throughout the borough.
 - b. Various signs described.
 14. Vaults under sidewalks.
 - a. The city owns the streets from lot line to lot line.
 - b. Under present system space beneath sidewalks, property of the city, is leased to private individuals for indefinite period at \$2 per square foot.
 - c. In Chicago an annual rental is charged for this space, based upon assessed valuation of the property.
 - d. If the Chicago method were applied to New York the revenue to the city from this source would be enormously increased.
 15. Sidewalks.
 - a. Many of the sidewalks in Manhattan are in a defective and dangerous condition.
 - b. 82 suits pending in the courts against the city, on January 1, 1906, for personal injury due to alleged defects in the sidewalks of Manhattan, involving the sum of \$634,600.
 - c. Sidewalks repaired by private owners and by the city.
 - d. Defective condition of Manhattan sidewalks due largely to the prevalence of antiquated, blue stone flagging.
 - e. Sidewalks studded with manholes and gratings which impede traffic of pedestrians.
- VI. Purchase of Supplies Without Contracts.
1. In 1904-1905 President Ahearn and his subordinates expended \$1,024,838.30 without public contract; of this sum the bureau of buildings and offices expended in the two years, \$444,965.99.
 2. Detailed analysis of expenditures without public contract.
 - a. \$40,950.62 expended in 1904-1905 for 'incidental' items.
 - b. \$181,754.51 expended in 1904 and 1905 for paving without contract.
 - c. The various beneficiaries.
- VII. Public Baths.
1. The City of New York has appropriated \$3,000,000 for the construction of free public baths during the past five years; of this sum over \$2,000,000 was appropriated for baths in Manhattan.
 2. Seven baths completed in Manhattan and one in course of construction.
 3. Cost of operation in Manhattan and Brooklyn baths compared.
 - a. For the three winter months of 1905 the cost to the city for each bath given to males in Manhattan was 5c. and to females

- 12c.; the cost in Brooklyn during the same period, for males and females, respectively, was 4c and 6c.
- b. The average cost per bath given in 1905 was, in Manhattan, 7c., and in Brooklyn, 3c.
 - c. Public baths in Manhattan extravagantly administered.
 - d. No system of bookkeeping for Manhattan baths which will indicate cost of construction and cost of operation.

VIII. Bureau of Sewers.

- 1. Mileage of sewers in 1905 was 511.36; number of catch basins was 6,181.
- 2. This public property is in the care of the bureau of sewers and under the jurisdiction of the borough president.
- 3. Many of the sewers in Manhattan are more than half a century old.
- 4. Much of the system is in need of rebuilding.
- 5. a. The development of underground railways conflicts with sewer system, and future subways will necessitate the rebuilding of many sewers.
 - b. No plan has been formulated by the bureau of sewers for meeting this problem.
- 6. Conflict between the rapid transit commission and the borough president with respect to rebuilding of sewers.

INTRODUCTION.

For certain purposes the several boroughs comprised within the City of New York are separately administered. This administration is under the control of a borough president, chosen by the electors of the respective boroughs. This pamphlet deals with the administration of the Borough of Manhattan and the presidency of John Francis Ahearn, during the years 1904-1905.

The pamphlet does not exhaustively report the various operations of the bureaus under President Ahearn during these two years. It aims, rather, to present a picture of the borough government and to set forth certain facts respecting the working of this government during the period under review. The purpose of the inquiry into the administration of the borough was, first, to ascertain the facts respecting that administration and, second, to suggest its improvement along specific lines. Facts and suggestions are both included in the pamphlet.

The suggestions relate chiefly to the ends to be achieved rather than to the method of their achievement. But, occasionally, as in the case of public baths, both the end and the means are suggested. In an examination into the administration of the public baths it was found that they were without competent supervision and were generally extravagantly maintained. This extravagance was, doubtless, largely due to a lack of knowledge on the part of the Borough President as to what it actually costs to operate the baths. This lack of knowledge resulted mainly from indifference. The Borough President and his aides will learn for the first time on reading this pamphlet what it costs to build the baths for which they are responsible, and what it costs to operate them. The provision of competent and responsible supervision and the establishment of accurate book-keeping are suggested as remedies for the public bath situation.

The pamphlet suggests no remedy for the evil it exposes with respect to the purchasing of supplies and the expenditure of money without public contract. It is shown that during the years 1904 and 1905 the various bureaus under President Ahearn and his own office spent more than a million dollars without public contract. Although some of the items which make up this great total could hardly have been contracted for,

as, for example, the \$16,000 spent for prison-made furniture, most of the money spent without the formalities which are designed to conserve the city's interests, and to secure for it the greatest value for its expenditures, represents wanton disregard of ordinary business judgment. It is believed that the publication of these expenditures will, in itself, do much to remedy the evil.

An important division of the work controlled by the borough president, is the supervision of the building operations in the borough. This work is performed by the bureau of buildings. This pamphlet, however, does not deal with the bureau of buildings. The function of this bureau differs so widely from the other activities grouped under the borough president, and presents so many problems in itself, that it justifies separate treatment.

The Bureau of City Betterment is indebted to President Ahearn and to his associates for their courteous co-operation in the collection of the data upon which this pamphlet is based.

HISTORY OF THE OFFICE OF BOROUGH PRESIDENT

When, by the charter of 1897, the five counties, comprised within the present City of New York, were consolidated into one great metropolis, the city was divided, for administrative purposes, into five boroughs corresponding closely with the county divisions. In each of these boroughs the office of borough president was created to preserve, as it were, a semblance of the former autonomy of the consolidated sections of the greater city.

The framers of the charter saw the danger of over-centralization of the affairs of the government at its seat in Manhattan. It was to offset the tendency of a government centered in Manhattan to neglect the outlying boroughs that the office of borough president was primarily established. The borough president was to be chosen by the electors of his borough. His chief duty was to be the jealous guardian of the interests of his borough, and its champion against neglect.

The charter commission of 1897 described the function of the borough president as follows: "To take the initiative in connection with all local improvements that are to be paid for by assessment for benefits, and to represent the borough on the Board of Public Improvements."

This Board of Public Improvements was the creation of the charter of 1897. Of it the charter commission said: "The Board is one of the chief constructive features of the charter and has been carefully thought out in its constitution and powers." The Board was composed of the heads of the six most important departments of public works, and a president, all appointed by the mayor; the mayor, the comptroller, and the corporation counsel, also an executive appointee. The borough presidents were added as partial members with no vote except on matters relating solely to their several boroughs. It was at the meeting of this Board that the borough president was supposed to prevent discrimination against his borough.

The Board of Public Improvements had jurisdiction over the water supply, highways, cleaning of streets, sewers, public buildings, lighting, bridges and the purchase of supplies, through-

out the entire city. It was argued by the commission which framed the charter that public works "ought to be primarily determined by expert authority, so that they may be developed upon a fixed plan and designed and constructed in accordance with the highest attainable skill." The charter, therefore, provided that the initiative in such improvements should be taken by the Board of Public Improvements, requiring that works of great magnitude and cost also have the approval of the Board of Estimate and the Municipal Assembly, the assembly having power to override the mayor's veto with a five-sixths vote. These provisions, it was thought, would insure the city's development while safeguarding it from spoliation.

In connection with the work of public improvement the charter of 1897 established local improvement districts, corresponding generally to the senatorial districts, and presided over by local boards, composed of the members of the Municipal Assembly residing in the district, with the borough president as chairman, ex-officio. These local boards were intended to serve as the spokesmen of the smaller divisions of the borough as the president served to make known the wants of the borough as a whole. Their power was limited to making recommendations to the Board of Public Improvements to initiate public work to be paid for in whole or part by assessment on the property benefited, except in minor matters, such as the laying of sidewalks, where the local boards were authorized themselves to initiate proceedings by resolution.

Concerning the local board, Mr. Edward M. Grout, the first president of the Borough of Brooklyn, said in 1899, prior to the revision of the charter: "The local boards have been the means of making known to the officials having power the needs of the localities. They have done this better than would have been done by any centralized system. Their recommendations in the matter of local assessable improvements, such as grading and paving streets, the construction of sewers and the opening of streets, have been in the best interests of localities, and, so far as those recommendations have been acted upon favorably, the local boards have produced benefits. The most pronounced benefit, however, has been in the making of minor improvements, such as flagging sidewalks, fencing vacant lots and grading lots. These matters are the only ones in which power is vested in local boards by the Greater New York charter (1897). The result has been that more sidewalks have been flagged in Brooklyn since consolidation (2 years) than was probably done in the former city of Brooklyn in a period of five to eight years.

"I believe the continuance of local boards to be desirable for the reason that they are the best medium between the citizens of the locality and the center of city government. The meetings of the local boards in Brooklyn have approached as nearly the town meeting plan of villages at which all citizens have a voice, as can be attained in a city. . . . What is needed now is power in the local boards to make their action effective—to direct the making of various street improvements and to see that they are done at once by the departments, instead of being limited, as now, merely to the power of making recommendations which, under the complex system of the charter, means long delay before it results in action."

In the deliberations of the local boards the borough president had a vote, but no veto. In the deliberations of the Board of Public Improvements he had vote only on matters relating exclusively to his borough. Mr. Grout wrote: "There is practically nothing that a borough president, after examination and having determined what should be done, can proceed to do. He can only then attempt to persuade some other official that the thing should be done. The benefit secured by borough presidents has been simply that resulting from their being advocates for the citizens of their boroughs. Their offices in the boroughs have to an extent been bureaus of information for the citizens, respecting provisions of the new charter not yet generally understood." Mr. Grout believed, however, in the continuance of the office but only with enlarged powers. Mr. Seth Low advocated an increase in the powers of the borough president, although he felt that wider powers for the local boards would interfere with what he considered a desirable centralization in the control of the city's work.

Criticism of the character made by Mr. Grout, and the presidents of the boroughs of The Bronx and Queens, together with a general protest on the part of residents in the outlying boroughs at apparent discrimination against them in favor of Manhattan by the Board of Public Improvements, led to a widening of the powers of the borough president in the revised charter of 1901.

The charter revisionists believed that the Board of Public Improvements, of which so much had been expected, had proved unsuccessful. It had not been possible to secure, under the regime of 'practical politicians', 'experts', sufficiently disinterested and far-sighted to be free from sectional bias. Without public works, and public works contracts, 'practical politicians' outside of Manhattan had found it difficult to justify their con-

tinuance in office to their constituents and backers. With political control centralized in Manhattan the political fruits were largely distributed there. President Haffen in The Bronx loudly complained that not one single public improvement had been authorized for The Bronx during the entire first year of the life of the new city.

It was decided, therefore, to decentralize the control of local improvements. The care for the harmonious development of the city was taken from the Board of 'experts' and placed in the hands of the Board of Estimate and Apportionment. The borough presidents were made representatives of the boroughs in fact as well as in theory.

The reorganization resulted in the abolition of the Board of Public Improvements. The departments of highways, sewers and public buildings were broken up into bureaus and placed under the borough presidents with jurisdiction limited to a single borough. The purchase of supplies, except for the offices under the borough president, was dissociated from the care of public buildings and entrusted to the heads of departments. Similarly, public lighting was added to the province of the Department of Water Supply.

The Department of Buildings was divided into five sections and placed under the borough presidents because one central office had proved inconvenient to citizens living in remote parts of the city and having business to transact with the Department.

The borough presidents were made members of the Board of Estimate and Apportionment. The difficulty of placing financial control in the hands of the spenders of city money was in a measure overcome by the principle of multiple voting. The new Board of Estimate was composed, in addition to the borough presidents, of the mayor, the comptroller, and the president of the Board of Aldermen, who were elected by general election in all boroughs. To each of these three members three votes were given on all matters coming before the board. The presidents of the boroughs of Manhattan and Brooklyn were each given two votes, and the presidents of the three remaining boroughs were each given one. In this way the public officials responsible to the entire city are collectively stronger by two votes than the combined representatives of the several subdivisions of the city.

The new charter also enhanced the importance of the local improvement boards by giving to those bodies authority to

initiate proceedings for local assessable improvements, subject to the approval of the Board of Estimate, and, in matters involving an expenditure of more than \$500,000 of the city's funds, the joint approval of the Board of Aldermen. Approval of the Board of Estimate is not necessary when a local board decides to spend a sum not exceeding \$2,000 for flagging sidewalks, laying crosswalks, fencing vacant lots, digging down lots or filling in sunken lots. No resolution of the local board may take effect without the approval of the borough president.

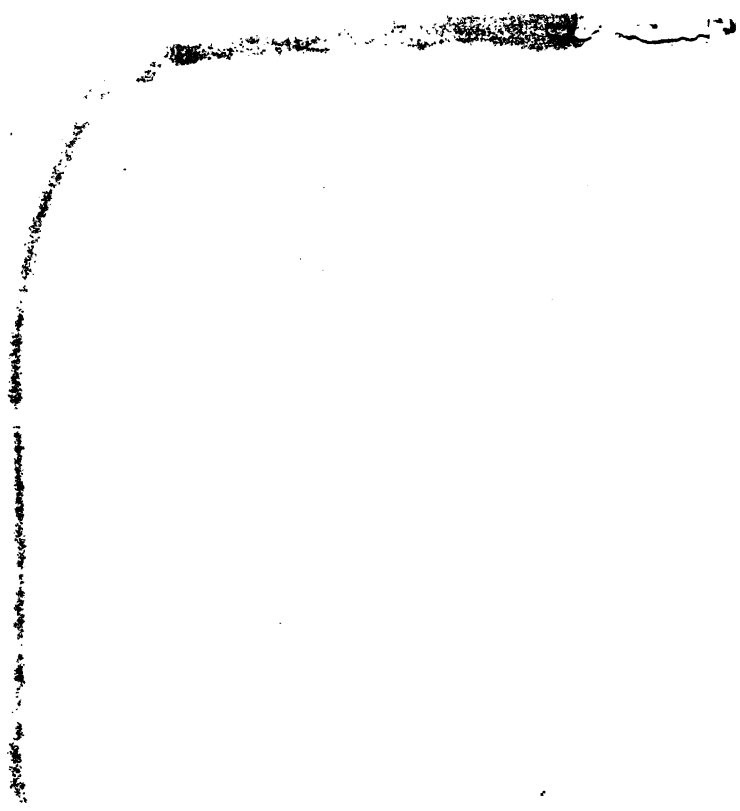
It will have been seen, therefore, that decentralization of control over the work of public improvement so important to a growing community and so valuable politically, was largely effected by the new charter. The harmonious development of the city is frankly left to political expediency, although the interacting interests of the different borough presidents assures to each a due measure of consideration in the work of public improvement.*

For the execution of public improvements the city was now divided, by the new charter, into five subdivisions, corresponding to the boroughs. The direction of the machinery of public work was placed in the hands of the borough president. He was given cognizance and control of the following matters:

- (1) Of regulating and grading streets.
- (2) Of constructing and repairing public roads.
- (3) Of paving and repaving.
- (4) Of laying surface railroad tracks.
- (5) Of the filling and fencing of lots and of licensing vaults under the sidewalks.
- (6) Of the removal of incumbrances.
- (7) Of the issuing of permits to use and open the streets.
- (8) Of all bridges except those that cross navigable streams.
- (9) Of all subjects relating to sewers.
- (10) Of certain public buildings.
- (11) Of all offices leased for public purposes.
- (12) Of public baths and comfort stations.
- (13) Of the supervision of all building activities in the borough.

In addition to the powers above specified, the presidents of Queens and Richmond have control of the cleaning of the streets within their jurisdiction.

*There is still, however, a decided disinclination on the part of the borough presidents to submit to control by the Board of Estimate as a whole in the matter of assessable improvements. It is argued that the city not only gains by the increase in taxable values by reason of these improvements, but profits in advancing money to the locality for their execution. Overdue assessments are subject to an interest charge of seven per centum while the city can borrow at four.



of the Borough of Manhattan, Showing Elective (1) and Exempt P
The President of the Borough, Elected by All the Electors of the Borough.
Term, Four Years. Salary, \$7,500 per Annum.

ITULATION:	
.....	\$7,500.00
intees	85,300.00
ntees (fees)	
appointees...	10,550.00
	<u>\$83,350.00</u>

Commissioner of Public Works.
Exempt: Salary, \$6,000 per annum.
William Dalton.
Appointed, Jan. 1, 1904.

1905.

Superintendent, Bureau of Sewers. Exempt: Salary, \$5,000 per annum. Matthew Donahue. Jan. 1, 1904, Jan. 15, 1906. John V. Coggey. Appointed, Jan. 15, 1906.
Cashier, Commissioner of Public Works. Exempt: Salary, \$2,400 per annum. Matthew J. Mallahan. Appointed, Jan. 19, 1904.
Assistant Commissioner of Public Works. Exempt: Salary, \$5,000 per annum. James J. Hagan. Appointed, Jan. 22, 1904.
Secretary to Commissioner of Public Works. Exempt: Salary \$2,500 per annum. Stephen C. Ferguson. Appointed, Jan. 6, 1904.
Superintendent, Bureau of Incumbrances. Civil service: Salary, \$3,000 per annum. Thomas M. McEntegart. Appointed, Oct. 1, 1902.

Positions Appointed by the Borough President.

Borough

Chief Engineer, Bureau of Sewers.
Exempt: Salary, \$6,000 per annum.
Horace Loomis.
Appointed, Aug. 31, 1875.

Chief Engineer, Bureau of Highways.
Exempt: Salary, \$5,000 per annum.
George B. Olney.
Appointed, Feb. 1, 1902.

Superintendent, Bureau of Highways.
Exempt: Salary, \$5,000 per annum.
George F. Scannell.
Appointed, July 1, 1904.

Engineer of Street Openings.
Civil service: Salary, \$5,000 per annum.
Joseph O. B. Webster.
Appointed, May 23, 1870.

Superintendent of Public Baths
and Comfort Stations.
Civil service: Salary, \$2,550 per annum.
Washington W. Weeks.
Appointed, Aug. 1, 1902.

Superintendent of Public Buildings and Offices.
Exempt: Salary, \$5,000 per annum.
William H. Walker.
Appointed, Jan. 1, 1902.

Consulting Engineer.
Exempt: Salary, fees.
Louis Horn.
Appointed, Jan. 1, 1902.

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Organization of the Office of the President

Stenographer to the Borough President.
Exempt: Salary, \$1,500 per annum.
Joseph L. Andem.
Appointed, July 9, 1902.

Executive Clerk.
Exempt: Salary, \$2,400 per annum.
Mark Levy.
Appointed, March 24, 1904.

Secretary of the Borough.
Exempt: Salary, \$4,000 per annum.
Bernard Downing.
Appointed, Jan. 1, 1904.

The
President
of the
Borough,

John
Francis
Ahearn.

Salary,
\$7,500
per
annum

Superintendent, Bureau of Buildings.
Exempt: Salary, \$5,000 per annum.
Isaac A. Hopper, Jan. 26, 1904—Jan. 29, 1906.
Edward S. Murphy, Jan. 29, 1906.

Secretary to the Superintendent,
Bureau of Buildings.
Exempt: Salary, \$2,500 per annum.
John F. Garvey.
Appointed, April 26, 1905.

Assistant Superintendent,
Bureau of Buildings.
Exempt: Salary, \$4,000 per annum.
John L. Jordan, May 9, 1902—Aug.
Joseph Gordon.
Appointed, Aug. 22, 1905.

Chief Inspector,
Bureau of Buildings.
Exempt: Salary, \$4,000 per annum.
Bernard J. Gorman.
Appointed, Jan. 26, 1904.

Consulting Architect,
Bureau of Buildings.
Exempt: Salary, fees.
Now Vacant.

REC

1 Elective o
16 Exempt a
2 Exempt ap
3 Civil servi

Each borough president is permitted to appoint a commissioner of public works, who may exercise all the administrative powers of his chief. Subordinate to the commissioner are the superintendents of highways, sewers, incumbrances, public buildings and offices, and public baths.

The superintendent of highways has charge of all matters pertaining to the building and repairing of streets.

The superintendent of sewers has charge of all matters in any way concerning the construction and care of the sewer system and the drainage thereof.

The superintendent of incumbrances removes street incumbrances and grants permits to builders and others to use the streets.

The duties of the superintendents of public buildings and offices and public baths are indicated by their titles.

The superintendent of buildings is in charge of the bureau of buildings. This bureau passes upon all plans for the construction of new buildings and repairs to old ones, and all construction work on buildings is subject to inspection by the bureau's experts.

THE BOROUGH PRESIDENT AND HIS STAFF.

JOHN FRANCIS AHEARN.

Leader in Tammany Hall in the Fourth (old) Assembly District.

The borough president enjoys in many ways great opportunities for social service. As the chairman of the local boards he is entrusted with the welfare of the various political subdivisions which these boards represent. Indeed, the purpose of social service was an underlying motive in the creation of the local boards. Respecting them the charter provides that they shall have "power to hear complaints of nuisances in streets and avenues, or against disorderly houses, drinking saloons conducted in violation of the laws regulating the traffic in liquor, gambling houses or any other places or congregations violative of good order or the laws of the state, or other matters or things concerning the peace, comfort, order or good government respecting any neighborhood within the district, or concerning the condition of the poor within the district. . . and to aid the Board of Aldermen and departments in the discharge of their duties respecting the good government in the said district." The power of the local board is the power of the borough president. The secretary of the borough, appointed by the president, is the secretary of the local boards, and the president as chairman exercises a veto which in practice makes him the complete arbiter in matters undertaken by them. Correspondingly, his power of initiative is great.

As the administrative head of the public baths system of the borough, the president's power to render service of a high order to the public is thus increased. Having charge of the sewer system and of the sidewalks and streets of the borough, the official activities of the president bear directly upon the welfare of the entire community.

The present borough president, John Francis Ahearn, was first elected to his office on the Tammany ticket in 1903. He was re-elected in 1905 for a term which will expire December, 1909. Mr. Ahearn has a political experience extending over many years. Born in New York City in 1853, he received his first public office in his election to the Assembly in 1882. After one term in the Assembly Mr. Ahearn became a clerk in a police court, returning to the Legislature as Senator in 1889. In 1891 and continuously to 1902 he was re-elected to the Senate. In 1902 he was superseded by Daniel J. Reardon, only to be nominated in the following year for the vastly more important office of borough president.

Senator Ahearn began his career in the Senate opposed to the Tammany forces, but was soon won over and became a steadfast party man. This loyalty to organization measures doubtless led him to vote for the famous 'Huckleberry Bill' in the session of 1892. This bill was passed in favor of the Union Railway Company, and granted that company a franchise to operate street railways in practically every part of the 'Annexed Territory,' as the part of New York City above the Harlem River was at that time known. It expressly relieved the company from certain important provisions of the railroad law which protected the city's interests. One of these provisions was that the city should sell franchises for street railways at public auction to the corporation which would agree to pay annually to the city the largest percentage of gross receipts. Another provision of the railroad law from which the measure exempted the Union Railway Company, related to the payment to the city of three per cent of their gross earnings by all companies receiving a franchise during the first five years of their operation, and five per cent thereafter. It was only after public protest that the 'Huckleberry Bill' was amended so as to provide for any compensation to the city and then it stipulated that the company should pay only one per cent of its gross earnings, but not until they averaged \$1,700 per day during six months and an additional one per cent for each additional \$1,700 so earned. Similarly, Mr. Ahearn's party fealty led him to vote for the notorious Central Park Speedway Bill, which provided for the construction by the city of a speedway in Central Park, parallel to Eighth Avenue, for the use of owners of fast horses. This bill became law, but was hurriedly repealed when its passage aroused a storm of protest. Senator Ahearn voted for the repeal.

Senator Ahearn acquired great popularity as a legislator because of his efforts in behalf of various classes of city employees. He was responsible for the law bearing his name which established a minimum salary rate for teachers and provided for periodical increases based on length of service. It was due to Senator Ahearn that the Board of Estimate and Apportionment was empowered to include in the annual budget an appropriation to meet the deficiencies in the police pension fund. Mr. Ahearn also placed the firemen of New York City under obligation to him because of his activity in their interest.

A thorough examination of Mr. Ahearn's legislative record has not been attempted. With his career as Senator this pamphlet is not concerned except in so far as it may serve to indicate the character of service Mr. Ahearn has previously rendered in office. In rehearsing his public activity Mr. Ahearn

has referred with pride to a measure introduced by him, but which failed to become law, known as the 'Mothers' Bill.' The 'Mothers' Bill' provided that money previously paid to institutions for the support of children of indigent widows, should, after careful investigation, be paid to the widows directly, and that the children should be left in the custody of their mothers.

Previously published reviews of Senator Ahearn's record in the Senate classify as objectionable a bill introduced by him in successive sessions, but which never became law, requiring steamship companies plying on Long Island Sound, coming from points outside of New York State, and passing through Hell Gate, to have their landing places in the East River, north of Grand Street. This affected the Fall River and other steamboat lines. In 1891, Senator Ahearn introduced a bill amending the Civil Service law, which failed of passage, providing that when the names of candidates for civil service positions who have passed an examination are transmitted to the appointing officer, no statement of the percentage which the candidates receive in examination should be transmitted, and forbidding discrimination in appointments by reason of higher or lower percentages received by candidates.

In the session of 1899 he introduced a bill which was passed, but later declared unconstitutional, providing for the refunding to accused officials of money spent in successful defense, on condition of the claims being allowed by the Supreme Court. This law was immediately taken advantage of by all the officials who had stood trial in consequence of the Lexow investigation, and before it was declared unconstitutional claims for nearly \$1,000,000 had been filed.

During his twelve years in the Senate Mr. Ahearn developed into a local politician of considerable power. He was elected leader of his district organization in 1902, a position he still holds. His local organization, the John F. Ahearn Association, is one of the strongest Tammany district bodies. It was in recognition of his strength as a politician that he received the nomination for the borough presidency, an office next in importance to that of mayor, from a patronage point of view, and one which a Tammany politician at one time picturesquely called 'a pudding.'

The record of his administration of the office of borough president, to which he was first elected in 1903, and the most important he has held, is partially set forth in the following pages. Possessed of considerable initiative, he has been active in securing appropriations for public improvements. The ex-

penditure of vast sums of money has been entrusted to his discretion. On the other hand, his administration has done nothing to solve certain pre-eminently important problems involved in the proper administration of the borough. Everywhere, still, abandoned car tracks encumber the highways of the borough. The public baths which he has built are not administered so as to be adequately used. He has done nothing to bring about an end to the constant destruction of pavements by the owners of sub-surface systems. He has tolerated extravagance in the purchase of supplies and in making repairs. For the practical politician the expenditure of money is the bricks and mortar of his power; it is the thing he most wishes to do. As an administrator he must be judged not by the amount of his spendings but by the method in which these expenditures are made.

As his assistants in the administration of his public work, Mr. Ahearn is allowed by charter a commissioner and assistant commissioner of public works, and superintendents of the various bureaus under him. These officials have been chosen by him for their political qualifications. The commissioner and assistant commissioner of public works, the superintendents of sewers and highways and his original appointment to the superintendency of buildings, are all district leaders in Tammany Hall with considerable experience in public office, but no conspicuously creditable service. Of the two remaining superintendents one, the superintendent of public buildings and offices, is a politician contractor, and the other, the superintendent of public baths and comfort stations, a civil service employe. The present incumbent of the superintendency of buildings is a contractor who is a member of Tammany Hall and the recipient of contracts in the past from Mr. Ahearn and his party. Being a district leader himself, Mr. Ahearn frankly holds that a district leader is the best qualified person available to superintend the various technical bureaus under his control, no matter what that district leader's engineering experience may be.

Not only does Mr. Ahearn look for his aides among his associates in practical politics, but he makes allegiance to his political organization the test for promotion among his subordinates. The civil service will protect a clerk who attends to his duty with reasonable faithfulness, no matter what his political affiliations may be, but the most devoted attention to his duties will not bring a man promotion, dependent as it is upon the sanction of the President, unless the employee is of the 'right political complexion.' This Mr. Ahearn has made understood throughout of the ranks of his subordinates. In this way, therefore, a premium is set upon activity in 'practical' politics. The first

consideration in promoting a man or selecting an applicant from the civil service lists is his past activity in behalf of Mr. Ahearn's organization, and his present willingness to serve those interests. It will need no argument to persuade the open-minded that if efficiency were desired above all else, Mr. Ahearn's method of selection and promotion would not be practiced. In order that it may be shown how Mr. Ahearn has carried out his view of good administration in the selection of his staff, this chapter is largely given over to previously published notes respecting their character and careers.

**WILLIAM DALTON: COMMISSIONER OF PUBLIC WORKS;
SALARY \$6,000 PER ANNUM.**

The Commissioner of Public Works is in one sense the vice-president of the borough. In the absence of the president, the full powers of that official devolve upon him. Nominally, this officer is the general overseer of the public works activities carried on in the various bureaus subordinate to him. His usefulness to the city is in direct ratio to his competency as a supervisor of these public works. This competency must depend upon his technical fitness. The general work of administration is entrusted to the president himself and his election by popular vote precludes the likelihood of his selection for technical fitness to execute public works. From the point of view of good administration, therefore, the commissioner of public works should be technically competent to intelligently supervise the making of pavements, the building of sewers and the construction of public buildings.

Mr. Ahearn has selected for his chief aide and the incumbent of this office William Dalton. Mr. Dalton is a butcher and carpenter by trade and a politician by profession. His chief recommendation to President Ahearn is the fact that he is the leader of the Tammany Hall organization in the 11th Assembly District. As a public servant his most conspicuous performance was his ardent espousal, during his term as Commissioner of Water Supply under Mayor Van Wyck's administration, of the Ramapo Water Company's proposal to convert the water supply system of New York City into a gold mine for that company's exclusive advantage.

Mr. Dalton's qualifications as an engineer were stated by himself in his testimony before the Mazet Committee, as follows:

Testimony before the special committee of the Assembly appointed to investigate the public offices and departments of the City of New York, etc. (The Mazet Committee.) Given Tuesday, September 12, 1899.*

Question (by counsel): "Mr. Dalton, did you go into your office possessed of any special acquirement of knowledge in the matter of engineering and water supply?" Answer: "Well so far as engineering, yes sir; I owned an engine for some years. At my place of business we manufactured butchers' supplies and did carpenter work. It was small; about eight-horse power."

In his present office Mr. Dalton has done nothing to attract attention. His record there, so far as it is known, is entirely colorless.

Some of the public statements regarding Mr. Dalton's career are herewith given:

William Dalton: *Testimony before Mazet Committee, Sept. 12, 1899. Pages 2682-2683, Vol. III. of printed testimony.* "I am the Commissioner of Water Supply. When I was appointed to this particular office I was in the wholesale butcher business. My place of business was 601 West 39th street, and 3, 5 and 7 Washington Market. I had that business and the carpenter business for some thirteen years, I believe. That is, I had a partner connected with the business up to the time I had this place (Commissioner of Water Supply). I did not actively participate in the business. I was Commissioner of Excise, president of the board, and deputy commissioner of street cleaning, and acting commissioner at times. I have held no other public position. My time has been altogether given to these public offices. There have been intervals when I held no public position, from the 27 of February, 1895, up to, I think, the 2 of January, 1898. I am also a district leader in Tammany Hall. I have been a district leader going on ten years; ten years, I think, this election. The duties of that position are somewhat numerous. It takes some time to perform the duties of that position of district leader. . . . I cannot perform both sets of duties with ease. I cannot perform my duties to the association and attend to the duties of the water commission at the same time."

"William Dalton's rise to power with Tammany Hall has been steady. He was first heard of in a political way in 1885 when he was elected to the Assembly where he remained three years. In 1889 he became deputy Street Cleaning Commissioner, and in 1893 Mayor Gilroy made him Excise Commissioner. In 1898 Mayor Van Wyck named him for his present position (Commissioner of Water Supply). He was born in New York about fifty years ago and has long been leader of the 11th A. D."

—N. Y. World, April 26, 1901.

*Printed in the published report of the testimony, page 2769, Vol. III.

"William Dalton, familiarly known as 'Billy,' a butcher and liquor dealer, is the Tammany leader of the 11th A. D. He represented the 17th A. D. in the Assembly several times. While there it was said of him that he was 'too much of a fool to be a rogue'. He is believed to have some valuable privileges in West Washington Market."

—N. Y. Evening Post, April 20, 1894.

"Mr. Dalton was born in the precinct he now conducts, and lived there all his life. His education was gained in the public schools of this city. After leaving school his father apprenticed him to the carpenter trade. He served his time and started out for himself. He opened a shop and made a specialty of manufacturing butchers' fittings. In this way he drifted into the butcher business, which he follows at present in Washington Market. During the years 1886-1887-1888 he was a member of the State Assembly."

—N. Y. World, October 6, 1891.

"William Dalton was sponsor for the \$200,000,000 Ramapo grab which nearly succeeded."

—N. Y. World, December 29, 1903.

BERNARD DOWNING: SECRETARY OF THE BOROUGH OF
MANHATTAN; SALARY \$4,000 PER ANNUM.

Mr. Downing is the Secretary of the Borough of Manhattan. In this capacity he is also Secretary of the Boards of Local Improvements in that borough. Mr. Downing has not yet risen to the rank of district leader in Tammany Hall.

The following items have been published concerning him:

"Mr. Downing is the vice-president of the Tammany organization of the 4th A. D., and is one of the most popular young men on the East Side."

—N. Y. World, December 23, 1903.

"The appointment of 'Barney' Downing as private secretary to Mr. Ahearn . . . has pleased the East Side. Mr. Downing is connected with many charitable enterprises."

—N. Y. World, December 24, 1903.

JOHN V. COGGEY: SUPERINTENDENT OF SEWERS; SALARY
\$5,000 PER ANNUM.

Mr. Coggey is a district leader in Tammany Hall in the 24th A. D.

The following statements concerning him have been published:

"John V. Coggey, Tammany; dry goods clerk; common school education; machine politician; present alderman; appointed vice Alderman Dunn, deceased; never held other office, but family always in politics; bears good reputation in his district."

—N. Y. Evening Post, October 30, 1901.

"Mr. Coggey was born in New York City on April 9, 1874, and received a public school education, being a graduate of grammar school No. 74 East 63rd Street. His first ambition was to study law, but he gave that up to enter the dry goods house of H. B. Claflin & Co., where he has been for the last ten years, and is still connected with that establishment. Mr. Coggey has been interested in politics since a child. He has not missed a meeting at Tammany Hall since he could find the way to 14th Street. Mr. Coggey was made captain of his election district as soon as he reached his majority. At present he is the youngest member of the Board of Aldermen. He has lived in 57th Street for twenty years."

—N. Y. Evening Telegram, October 30, 1901.

"Borough President Ahearn yesterday appointed John V. Coggey Superintendent of Sewers to succeed Matthew Donahue, who declined re-appointment."

—N. Y. Tribune, January 1, 1906.

"Place found for Coggey. Ahearn gives district leader a job whom Mayor refuses. Coggey was 'taken care of' by Borough President Ahearn who is dispensing patronage to suit Charles F. Murphy."

—N. Y. World, January 16, 1906.

Mr. Coggey's immediate predecessor in office, Matthew F. Donahue, was and is the Tammany Hall leader in the Twenty-first Assembly District.

GEORGE F. SCANNELL: SUPERINTENDENT OF HIGHWAYS;
SALARY \$5,000 PER ANNUM.

These items are discovered concerning Mr. Scannell, published as follows:

"George F. Scannell, brother of Fire Commissioner Scannell . . . knows a good thing when he sees it. Scannell was very anxious several months ago to become a clerk in Jefferson Market Police Court. At the last moment he gave up the berth and recommended another applicant who got the place.

"When Scannell was asked why he had not accepted the position for himself he said: 'I get \$1,500 a year in the Surrogate's office and I am not required to show up. A court clerk's salary is \$2,000, but what is it when you have to show up seven days a week? I think I will stick to the soft snap in the Surrogate's office.'

"The clerks of the Surrogate's office say Scannell makes his appearance only when he feels like doing so. For this conscientious performance of his duty he was appointed Thursday last to be administration clerk at a salary of \$2,500 per year."

—N. Y. World, February 11, 1894.

"John J. Scannell resigned from the leadership of the 25th A. D. and George F. Scannell, administration clerk of the Surrogate's office, is to succeed him."

—N. Y. World, January 8, 1898.

"Mayer attacks Scannell, etc."

"Marcus R. Mayer, who is trying to oust George F. Scannell from the Democratic leadership of the 25th A. D., addressed a meeting last night. . . . He said Mr. Scannell was . . . before he was appointed to a \$2,000 position in the Surrogate's office. Out of the \$2,000 a year he has lately bought a piece of property worth \$30,000."

—N. Y. World, September 5, 1902.

"George F. Scannell appointed Highway Commissioner, (Superintendent of Highways) by Borough President Ahearn."

—N. Y. World, January 1, 1904.

WILLIAM H. WALKER: SUPERINTENDENT OF PUBLIC BUILDINGS AND OFFICES; SALARY \$5,000 PER ANNUM.

Mr. Walker's ability in the purchasing of supplies is set forth in a following chapter. His efficiency as the administrative officer of the public baths system is also indicated in a later chapter. Mr. Walker has held his present office since 1902, having been originally appointed by Borough President Jacob A. Cantor.

Among the published items concerning his career are the following; attention is called to his commendable service with the establishment of recreation piers:

"In session of 1892 secured the passage of an act to provide for the health and recreation of the people of New York by setting apart certain piers along the river fronts of the City of New York for their use."

—N. Y. World, July 3, 1892.

"Walker, the Tammany candidate for Assembly in the 8th District, was born in Ireland in December, 1849. He was educated in the free public schools of Dublin in his native country and came to New York about twenty years ago. He learned the trade of a carpenter and builder, in which occupation he is still engaged. He is a prominent member of the Tammany Hall organization. He served as a member of the Board of Aldermen from 1887 to 1890. He was elected to the last session of the Assembly from the old 9th District and served on numerous important committees, including those on Taxes and Retrenchment, Privileges and Elections and on Trades and Manufactures."

—N. Y. World, November 8, 1892.

"Former Alderman William H. Walker, who is fighting Councilman Patrick J. Ryder for the Tammany leadership of the 3rd District, declared last night that Richard Croker has never been so badly mistaken as he was when he said that when the district fight was over all those engaged in it will remain in Tammany Hall.

"I, for one, will not remain in Tammany, if we lose," said Mr. Walker. "If Croker beats us now we will form an independent democracy and try again to overthrow him."

—N. Y. Herald, September 12, 1899.

"Councilman Patrick J. Ryder was again victorious in the 3rd A. D. Ex-Assemblyman William H. Walker made a good fight against him, but was not strong enough to accomplish his defeat."

—N. Y. World, September 20, 1899.

"Grout holds up Cantor's bills. Comptroller talks of investigating Bureau under Borough President. Refuses to pay for 'phones in homes of officials." (Wm. H. Walker, Supt. of Public Buildings, \$66.00 per year.)

—N. Y. World, June 27, 1902.

"Fat salaries in many jobs in Hall of Records. Estimate of \$95,000 for maintenance next year. Reminds old timers of the days of 'Bill' Tweed. City cannot use it until next July. Cost of running it exceeds that of greatest office building in New York."

—N. Y. World, December 28, 1905.

EDWARD S. MURPHY: SUPERINTENDENT OF BUILDINGS;
SALARY \$5,000 PER ANNUM.

Mr. Murphy is a member of Tammany Hall, but a contractor and builder as well. His present office is the first he has held. He was appointed to succeed Isaac A. Hopper, in January, 1906. Mr. Hopper who had held the position for two years had proved a failure as the superintendent of buildings, although he had secured a fortune as a contractor.

Mr. Hopper is the leader of the Tammany Hall organization of the 31st A. D.

Mr. Murphy holds no official position in Tammany Hall.

STATEMENT OF APPROPRIATIONS TO THE PRESIDENT OF THE BOROUGH OF MANHATTAN.

1902 Budget.

General Administration.

Salaries:

Salary of the President.....	\$7,500.00	
Salary of the Commissioner of Public Works, Clerks, Assistants, Engineers and Employees	58,150.00	
	<u>\$65,650.00</u>	
Supplies and Contingencies.....	8,500.00	
		<u>\$74,150.00</u>
Bureau of Engineer of Street Openings.		
Salaries		19,120.00
Bureau of Highways.		
Salaries	72,240.00	
Boring Examinations for Grading Contracts.....	2,000.00	
Boulevards, Roads and Avenues, Maintenance of, Flagging Sidewalks and Fencing Vacant Lots in front of City Property.....	114,150.00	
One Hundred and Fifty-fifth Street Viaduct, Maintenance and Repair.....	2,000.00	
Repairs and Renewal of Pavements and Regrading Repaving Streets and Avenues.....	6,000.00	
Roads, Streets and Avenues unpaved, Maintenance of and Sprinkling.....	360,758.00	
Maintenance of Eighth Avenue Pavement.....	75,000.00	
Chemical and Cement Laboratory.....	35,000.00	
	<u>19,200.00</u>	
	2,500.00	
		<u>688,848.00</u>
Bureau of Incumbrances.		
Salaries	13,100.00	
Removing Obstructions in Streets and Avenues...	15,000.00	
		<u>28,100.00</u>
Bureau of Sewers.		
Salaries	62,550.00	
Boring Examinations	3,100.00	
Sewers—Repairing and Cleaning,		
Payrolls and Supplies.....	165,000.00	
		<u>230,650.00</u>
Bureau of Public Buildings and Offices.		
Salaries and Wages.....	259,419.53	
Supplies and Repairs (Including Rivington St. Bath)	134,000.00	
		<u>393,419.53</u>
Bureau of Public Baths and Public Comfort Stations.		
Salaries		57,781.50
Bureau of Buildings.		
Salaries	226,000.00	
Rents	16,500.00	
Contingencies and Emergencies.....	8,000.00	
	<u>250,500.00</u>	
		<u>\$1,742,569.03</u>

1903 Budget.

General Administration.

Salaries:

Salary of the President.....	\$7,500.00	
Salaries of Commissioner of Public Works, Clerks, Assistants, Engineers and Employees	62,500.00	
	<hr/>	70,000.00
Supplies and Contingencies.....		8,500.00

78,500.00

Bureau of Engineer of Street Openings.

Salaries	15,940.00	
Supplies and Contingencies	3,180.00	

19,120.00

Bureau of Highways.

Salaries	73,400.00	
Boring Examinations for Grading Contracts.....	2,000.00	
Boulevards, Roads and Avenues, Maintenance of, Flagging Sidewalks and Fencing Vacant Lots in Front of City Property.....	114,150.00	
	<hr/>	2,000.00
One Hundred and Fifty-fifth Street Viaduct, Maintenance and Repairs.....	6,000.00	
Repairs and Renewal of Pavements and Regrading Roads, Streets and Avenues unpaved, Maintenance of and Sprinkling.....	360,758.00	
	<hr/>	35,000.00
Maintenance of Eighth Avenue Pavement.....	19,200.00	
Chemical and Cement Laboratory.....	2,500.00	
Riverside Drive Viaduct, Maintenance of,	17,000.00	

632,008.00

Bureau of Incumbrances.

Salaries	13,200.00	
Removing Obstructions in Streets and Avenues...	15,000.00	

28,200.00

Bureau of Sewers.

Salaries	65,920.00	
Boring Examinations.....	3,100.00	
Sewers—Repairing and Cleaning,		
Payrolls and Supplies.....	165,000.00	

234,020.00

Bureau of Public Buildings and Offices.

Salaries and Wages.....	262,421.25	
Supplies and Repairs (Including Rivington Street Bath)	135,300.00	

397,721.25

Bureau of Public Baths and Public Comfort Stations.

Salaries	56,311.25	
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Bureau of Buildings.

Salaries	235,050.00	
Rents	16,500.00	
Contingencies and Emergencies.....	8,000.00	
	<hr/>	259,550.00

\$1,705,430.50

1904 Budget.

General Administration.

Salaries:

Salary of the President.....	\$7,500.00	
Salary of the Commissioner of Public Works, Clerks, Assistants, Engineers and Employees	62,500.00	
	<u>70,000.00</u>	
Supplies and Contingencies.....	8,500.00	
		<u>78,500.00</u>

Bureau of Engineer of Street Openings.

Salaries	15,940.00	
Supplies and Contingencies	3,180.00	
	<u></u>	<u>19,120.00</u>

Bureau of Highways.

Salaries	73,400.00	
Boring Examinations for Grading Contracts.....	2,000.00	
Boulevards, Roads and Avenues, Maintenance of, Flagging Sidewalks and Fencing Vacant Lots in Front of City Property.....	114,150.00	
One Hundred and Fifty-fifth Street Viaduct, Main- tenance and Repairs	2,000.00	
Repairs and Renewal of Pavements and Regrading Roads, Streets and Avenues Unpaved, Maintenance of and Sprinkling.....	6,000.00	
	410,758.00	
Maintenance of Eighth Avenue Pavement.....	35,000.00	
Chemical and Cement Laboratory.....	19,200.00	
Riverside Drive Viaduct, Maintenance of,	2,500.00	
Street Signs, Maintenance of,	17,000.00	
	<u>3,000.00</u>	
		<u>685,008.00</u>

Bureau of Incumbrances.

Salaries	13,200.00	
Removing Obstructions in Streets and Avenues...	15,000.00	
	<u></u>	<u>28,200.00</u>

Bureau of Sewers.

Salaries	65,920.00	
Boring Examinations	3,100.00	
Sewers—Repairing and Cleaning,		
Payrolls and Supplies.....	165,000.00	
	<u></u>	<u>234,020.00</u>

Bureau of Public Buildings and Offices.

Salaries and Wages.....	262,421.25	
Supplies and Repairs (Including Public Baths and Comfort Stations).....	210,300.00	
	<u></u>	<u>472,721.25</u>

Bureau of Public Baths and Public Comfort Stations.

Salaries	120,526.25	
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Bureau of Buildings.

Salaries	235,050.00	
Rents	16,500.00	
Contingencies and Emergencies.....	8,000.00	
	<u></u>	<u>259,550.00</u>
		<u>\$1,897,645.50</u>

1905 Budget.

General Administration.

Salaries:

Salary of the President	\$7,500.00
Salaries of the Commissioner of Public Works, Clerks, Assistants, Engineers and Employees	62,500.00

\$70,000.00

Supplies and Contingencies	8,500.00
----------------------------------	----------

\$78,500.00

Bureau of Engineer of Street Openings.

Salaries	18,140.00
Supplies and Contingencies	3,180.00

21,320.00

Bureau of Highways.

Salaries	73,400.00
Boring Examinations for Grading Contracts.....	2,000.00
Boulevards, Roads and Avenues, Maintenance of, Flagging Sidewalks and Fencing Vacant Lots in Front of City Property	114,150.00
One Hundred and Fifty-fifth Street Viaduct, Maintenance and Repairs	2,000.00
Repairs and Renewal of Pavements and Regrading Roads, Streets and Avenues Unpaved, Maintenance of and Sprinkling	6,000.00
Repairs and Renewal of Pavements and Regrading Roads, Streets and Avenues Unpaved, Maintenance of and Sprinkling	410,758.00
Maintenance of Eighth Avenue Pavement.....	35,000.00
Chemical and Cement Laboratory.....	19,200.00
Riverside Drive Viaduct, Maintenance of,	2,500.00
Street Signs, Maintenance of,	10,000.00
	3,000.00

678,008.00

Bureau of Incumbrances.

Salaries	15,300.00
Removing Obstructions in Streets and Avenues..	15,000.00

30,300.00

Bureau of Sewers.

Salaries	65,920.00
Boring Examinations	3,100.00
Sewers—Repairing and Cleaning, Payrolls and Supplies	215,000.00

284,020.00

Bureau of Public Buildings and Offices.

Salaries and wages	336,500.00
Supplies and Repairs (Including Public Baths and Comfort Stations)	210,300.00
Rents of Offices in Park Row Building.....	32,401.01

579,201.01

Bureau of Public Baths and Public Comfort Stations.

Salaries	165,549.50
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Bureau of Buildings.

Salaries	235,050.00
Rents	16,500.00
Contingencies and Emergencies	8,000.00

259,550.00

\$2,096,448.51

Note: The budget allowances are completely expended. Additional expenditures for purposes of administration are shown in the revenue bond account infra.

Street Improvement Fund in the Borough of Manhattan.

Year.	Amount.	
1902	\$447,820.94	These amounts are met by assessment bonds, and
1903	469,315.29	are later recovered in toto by the city through special
1904	644,203.12	assessments made upon the property benefited. These
1905	689,180.97	assessments become liens upon such property.

\$2,250,520.32

Fund for Restoring Pavements in the Borough of Manhattan.

October 28, 1904, \$25,000 was appropriated by the Board of Estimate and Apportionment for a special fund for the restoring of pavements damaged by contractors, and building operations, in those cases where contractors failed to make satisfactory restoration of the pavements. The amounts so expended become liens against the property.

Corporate Stock Appropriated by the Board of Estimate and Apportionment at the Request of the President of the Borough of Manhattan.

1902.		
Date.	Amount.	Purpose.
4-18-02	\$1,200,000.00	Repaving streets.
5-23-02	75,000.00	Construction Criminal Court Building.
6-6-02	105,000.00	Baths; construction and equipment.
6-13-02	220,000.00	Baths; sites and construction.
7-25-02	3,000.00	N. Y. County Court House.
10-13-02	83,000.00	Baths; sites and construction.
11-7-02	30,000.00	Construction Criminal Court Building.
12-5-02	1,357.70	N. Y. County Court House; plumbing plans.

\$1,717,357.70

1903.		
1-16-03	*100,000.00	N. Y. County Court House; renovation and improvement.
2-20-03	800,000.00	Repaving streets.
2-20-03	**955,000.00	Repaving streets.
3-27-03	225,000.00	Seven Public Comfort Stations.
2-27-03	5,000.00	Baths; plans.
1-9-03	703.16	Riverside Drive Extension, viaduct, borings.
4-24-03	2,500.00	N. Y. County Court House.
5-22-03	3,236.65	N. Y. County Court House.
6-5-03	17,025.05	N. Y. County Court House.
6-15-03	1,417.75	N. Y. County Court House.
7-1-03	800,000.00	Riverside Drive Extension.
7-1-03	648,500.00	Baths. (23rd Street, \$200,000.00.)
7-15-03	255.00	N. Y. County Court House.
7-22-03	52,000.00	Completion Criminal Court Building.
9-23-03	743,336.96	Riverside Drive Extension.
12-4-03	1,750,000.00	Riverside Drive Extension.
12-4-03	75,000.00	Baths; completion 23rd Street.
12-4-03	158,000.00	Repaving streets.

6,336,974.57
100,000.00

\$6,236,974.57

*Cancelled.

**\$3,150,000 was appropriated on this date for the city at large, but it was not divided among the various boroughs until June 5, 1903.

1904.

Date.	Amount.	Purpose.
3-31-04	900,000.00	Repaving streets.
4-15-04	127,000.00	Thirteenth District Magistrate's Court; purchase.
4-29-04	23,520.00	Edgecombe Avenue retaining wall.
5-19-04	50,000.00	Repairs to N. Y. County Court House.
5-19-04	633,000.00	Four baths; sites and buildings.
5-27-04	35,000.00	Thirteenth District Magistrates' Courts; repairs and improvements.
6-24-04	45,000.00	Repairs to City Hall.
7-15-04	20,000.00	Repairs to Brownstone Building, City Hall Park.
9-16-04	10,000.00	Hudson Memorial Bridge; plans, surveys and buildings.
9-30-04	25,000.00	Permanent Betterments to 57th St., Jefferson Market, and Harlem Court houses.
9-30-04	20,000.00	Public Comfort Stations.
12-23-04	30,000.00	Street signs.
	<u>\$1,918,520.00</u>	

1905.

1-27-05	900,600.00	Repaving streets.
1-27-05	100,000.00	Repaving streets.
1-27-05	250,000.00	Repaving streets.
2-24-05	9,000.00	Completing repairs to 13th Dist. Court.
3-16-05	25,000.00	Public comfort stations.
3-16-05	100,000.00	Reconstructing sewers.
3-16-05	300,000.00	Two baths; sites and construction.
4-7-05	10,000.00	Lafayette boulevard retaining wall.
5-5-05	75,000.00	Improving four markets.
9-15-05	25,000.00	Delancey street improvement.
9-15-05	200,000.00	Repaving streets.
11-24-05	264,000.00	Improving 7th avenue, 110th to 153rd streets.
9-22-05	100,000.00	Reconstructing sewers.
12-18-05	10,500.00	Criminal Court building; improvements.

\$2,368,500.00

Summary.

Years.	Amount.
1902.....	\$1,717,357.70
1903.....	6,236,974.57
1904.....	1,918,520.00
1905.....	2,368,500.00
	<u>\$12,241,352.27</u>
1902 and 1903.....	\$7,954,332.27
1904 and 1905.....	4,287,020.00
	<u>\$12,241,352.27</u>
Total 4 years	\$12,241,352.27

Special Revenue Bonds Appropriated by the Board of Estimate and Apportionment at the Request of the President of the Borough of Manhattan.

1902.

Date.	Amount.	Purpose.
5-16-02	\$40,000.00	Street signs.
7-28-02	100,000.00	Repairing and reconstructing sewers.
7-11-02	25,000.00	Repairs to City Hall.
9-12-02	25,000.00	Repairs to City Hall.
	<hr/> \$190,000.00	

1903.

2-20-03	20,000.00	Refurnishing City Hall.
3-13-03	500.00	Children's Court; repairs and alterations.
5-22-03	100,000.00	Repairing and reconstructing sewers.
7-31-03	15,000.00	Street signs.
8-19-03	15,000.00	Refurnishing N. Y. County Court House.
10-22-03	3,000.00	Cleaning Markets.
12-11-03	7,000.00	Equipping and maintaining 12th and 13th Dist. Municipal Courts.
	<hr/> \$160,500.00	

1904.

1- 5-04	15,000.00	Redecorating City Hall.
2-19-04	2,650.00	Portrait Hon. Andrew H. Green.
3- 4-05	12,000.00	Office furniture, General and Special Sessions Courts, Criminal Court Building.
4-22-04	100,000.00	Repairing and reconstructing sewers.
4-29-04	50,000.00	Repairs to N. Y. County Court House.
5-13-04	50,000.00	Repairing and renewing street pavements.
8- 2-04	100,000.00	Cleaning sewers and basins.
	<hr/> \$329,650.00	

1905.

5- 5-05	50,000.00	Repairing street pavements.
5-26-05	6,000.00	Moving and equipping Sheriff's office.
6- 2-05	30,000.00	Coal; baths, comfort stations and public buildings.
6- 9-05	15,000.00	Floating baths, repairs.
7- 7-05	5,000.00	Repairs and alterations City Chamberlain's Office.
7- 7-05	90,000.00	Repairing and maintaining asphalt pavements.
7-14-05	50,000.00	Supplies and repairs for public buildings.
7-21-05	25,000.00	Repairs to four markets.
11-24-05	2,000.00	Repairs and alterations City Chamberlain's Office.
12-18-05	20,000.00	Repairing and maintaining asphalt pavements.
12-18-05	6,000.00	Repairs to N. Y. County Court House.
	<hr/> \$299,000.00	

Summary.

Years.	Amount.
1902.....	\$190,000.00
1903.....	160,500.00
1904.....	329,650.00
1905.....	299,000.00
	<hr/>
	\$979,150.00
1902 and 1903.....	\$350,500.00
1904 and 1905.....	628,650.00
	<hr/>
Total for four years	\$979,150.00

ANALYSIS OF THE PAYROLL OF THE OFFICE OF THE PRESIDENT OF THE BOROUGH OF MANHATTAN.

January 31, 1906.

Department Name	C. S. Employees except laborers. No.	Salary			Laborers No.	Wages	
		Per Annum.	Per Month.	Per Day.		Per Week.	Per Day.
President	16	\$35,450	.....	.....	...	.....	.....
Public Works.	21	44,250	.....	.....	...	.....	.....
Ch. Engineer.	21	33,300	.....	.....	...	.....	.....
Ch. Engineer.	27	.....	.....	\$105.50	...	.....	.....
St. Openings..	10	16,600	.....	.....	...	.....	.....
Bur. Highw's.	36	56,950	.....	.....	...	.....	.....
Bur. Highw's.	179	.....	.....	655.60	293	.....	\$795.50
Paving	127	.....	.....	585.16	...	.....	.....
Roads	3	5,250	.....	.....	...	.....	.....
Roads	42	.....	.....	154.00	132	.....	418.25
Incumbrances.	11	15,600	.....	.....	...	.....	.....
Incumbrances.	1	.....	.....	3.50	2	.....	4.00
Pub. Bldgs. & Offices	31	37,370	.....	.....	...	.....	.....
Do.	149	.....	.....	485.25	...	.....	.....
Do.	194	.....	\$5,940.00	.....	37	.....	85.00
Do. ....	...	.....	.....	.....	2	\$24.00	.....
Pub. Markets.	1	1,950	.....	.....	...	.....	.....
Pub. Markets.	2	.....	.....	5.50	14	171.50	.....
Pub. Markets.	...	.....	.....	.....	37	.....	123.25
Public Baths & Comfort Stations	1	2,550	.....	.....	...	.....	.....
Do.	38	.....	.....	87.00	...	.....	.....
Do.	2	.....	60.00	.....	6	.....	14.50
Int. Baths....	106	.....	.....	268.00	...	.....	.....
Float. Baths..	17	.....	.....	48.25	...	.....	.....
Bur. Bldgs....	179	234,760	.....	.....	...	.....	.....
Bur. Sewers..	36	64,950	.....	.....	...	.....	.....
Bur. Sewers..	2	.....	135.00	.....	...	.....	.....
Bur. Sewers..	87	.....	.....	379.20	142	.....	393.25
Totals	1,339	\$548,980	\$6,135.00	\$2,776.96	665	\$195.50	\$1,833.75

Summary.

No. Em- ployees	Wages per Annum.	No. Em- ployees.	Wages per Month.	No. Em- ployees.	Wages per Week.	No. Em- ployees.	Wages per Diem.
16	\$35,450.00	194	\$5,940.00	2	\$24.00	27	\$105.50
21	44,250.00	2	60.00	14	171.50	179	655.50
21	33,300.00	2	135.00	—	—	203	795.50
10	16,600.00	—	—	16	\$195.50	127	585.16
36	56,950.00	198	\$6,135.00	—	—	42	154.00
3	5,250.00	—	—	—	—	132	418.25
11	15,600.00	—	—	—	—	3	7.50
31	37,370.00	—	—	—	—	149	485.25
1	1,950.00	—	—	—	—	37	85.00
1	2,550.00	—	—	—	—	39	128.75
179	234,760.00	—	—	—	—	44	101.50
36	64,950.00	—	—	—	—	106	268.00
366	\$548,980.00	—	—	—	—	17	48.25
—	—	—	—	—	—	87	379.20
—	—	—	—	—	—	142	393.25
—	—	—	—	—	—	1,424	\$4,610.71

Recapitulation.

No. Employees.	
366,	per annum.
198,	per month.
16,	per week.
1,424,	per day.
2,004	

ANALYSIS OF THE PAYROLL OF THE OFFICE OF THE PRESIDENT OF THE BOROUGH OF MANHATTAN, JANUARY 31, 1906.

Average Term of Civil Service Employees Under Borough President.

Department.	No.	Classification.	Years.
President	14	Office and Clerical	5.20
Public Works	17	Office and Clerical	11.90
Chief Engineer	48	Office and Technical	8.60
Street Openings	10	Office and Technical	*16.45
Bureau Highways	22	Office and Clerical	8.00
—	48	Inspectors	7.80
—	142	Foremen	7.80
Paving	41	Rammers	8.00
—	86	Pavers	8.30
Roads	3	Office and Clerical	14.00
—	42	Foremen	7.00
Incumbrances	3	Office and Clerical	12.20
—	6	Inspectors	13.60
—	1	Keeper	19.00
—	2	Foremen	4.50

*Av. for 5 employees, 29.1.

Public Buildings and Offices	7	Office employees	9.80
	17	Janitors	10.00
	10	Engineers	8.50
	2	Watchmen	15.40
	23	Attendants	7.70
	24	Foremen	7.90
	10	Carpenters	5.10
	232	Cleaners	8.80
	10	Firemen	9.90
	17	Stokers	4.30
	2	Tinsmiths	2.80
	2	Roofers	2.30
	5	Plumbers	6.60
	3	Varnishers	5.80
	2	Electricians	3.00
	2	Skilled workers	3.00
	1	Skilled laborer	13.50
Public Markets	1	Inspector	7.60
	1	Assistant Foreman	7.50
	1	Watchman	5.40
Bureau Public Baths and Comfort Stations	1	Superintendent	3.50
	1	Foreman	**7.70
	6	Cleaners	**6.70
	33	Attendants	**1.50
Interior Baths	5	Engineers	2.50
	7	Firemen	1.50
	15	Stokers	1.30
	1	Cleaner	4.60
	80	Attendants	3.00
Floating Baths	1	Foreman	11.25
	2	Carpenters	7.75
	14	Attendants	5.30
Bureau Buildings	34	Clerks	***10.20
	2	Watchmen	2.20
	106	Inspectors	7.00
	7	Stenographers	7.70
	17	Messengers	11.10
	5	Cleaners	6.10
	1	Driver	7.70
	5	Engineers	6.70
Bureau Sewers	16	Clerks	12.25
	11	Draughtsmen and Axemen	11.50
	55	Foremen	6.10
	29	Inspectors	8.60
	13	Masons and Bricklayers	5.40
Av. term for all employees			7.66

**Comfort Stations.

***26 clerks, 13 years.

THE BUREAU OF HIGHWAYS AND STREET PAVEMENTS.

The very heart of the work performed under the direction of the borough presidents is the making and the maintenance of street pavements. A well-paved street does much to make a city fair and healthful. Upon it are dependent pleasure in driving, swiftness and economy in transporting goods, the life of wagons and horses and the health of the population. There is a direct connection between a noisy pavement and the nervous systems of the people who live near it. A pavement filled with holes and depressions invites the accumulation of rubbish and filth. A poor pavement cannot be kept clean, so that organic diseases attributable to unclean pavements, can often be traced further on to the inefficiency of the highway engineer.

Defective pavements are also a menace to life and limb. Suits for personal injuries due to the alleged faulty condition of streets, are frequently brought against the municipality; in fact, forty-eight of such actions, involving the total sum of \$436,250, were pending in the courts on December 31, 1905. These suits concern the Borough of Manhattan alone.*

In the borough of Manhattan there are 427 miles or 9,270,770 square yards of pavement. The value of this pavement, estimated at the absurdly low figure of \$2.50 a square yard, is \$23,176,925. This is merely an arbitrary estimate and in no way represents the investment in pavements in the Borough of Manhattan. It fairly indicates, however, the financial importance of the problem dealt with by the bureau of highways.

*As bearing directly upon this subject the following letter was sent by Comptroller Metz, on August 1, 1906, to the respective borough presidents:
"Numerous claims have been filed with the department for damage alleged to be due for personal injuries received in accidents due to the negligence of the City of New York in not properly protecting its highways.

"In some cases the cause of the damage was the dangerous and defective condition of the pavement. In other cases it appeared that contractors who received permission from the city to make excavations in connection with either public or private work, have neglected to properly safeguard the same, or have neglected to surround the excavations with lights which would act as warning signs.

"Again, the accidents which resulted in injuries were due to obstructions which were permitted to remain in the street without proper warning being given of the existence of the same.



The small pox condition of Eighth Avenue at the end of a ten-year maintenance which cost the city \$19,200 a year.



Eighth Avenue, west side, looking south from 46th Street, showing condition of asphalt pavement.

The holes are filled with broken stone and dirt making them appear shallow.

"The neglect of the city in the above respects has been called to my personal attention. By actual observation, I am able to say that the conditions set forth in some of the claims have not been exaggerated. The amounts which the city is compelled to pay out annually on account of damages arising as aforesaid, is considerable.

"I wish, therefore, to call your attention to this character of claims and to the causes therefor, in order that you might have instructions given to the inspectors under your jurisdiction, to see to it that when any condition arises in the public highways which is apt to result in an accident, that such condition is remedied at once. These instructions cannot be too explicit, for at times the highways of the City of New York are in such condition that it would seem as if the city was actually inviting damage suits against it."

The bureau of highways is presided over by a superintendent who is responsible to the commissioner of public works, who in turn is directed by the president. This is the theoretical arrangement. Neither the commissioner of public works nor the superintendent of highways has any responsibility other than that placed upon them at the pleasure of the president. In practice the president is himself the chief of the bureau of highways, and directs its work. The president delegates, to be sure, all the technical details of the work to his engineers. He decides, however, what streets shall be paved, and when, and what material shall be used in the repaving. In controlling the actions of the local boards he determines when and where new streets shall be made, subject to the financial approval of the Board of Estimate.

ASPHALT PAVEMENTS.

President Ahearn, early in his administration, gave special attention to the problem of asphalt paving. He caused specifications to be prepared which were intended to permit the use of only those asphalt cements which contain a high amount of bitumen. The specifications were particularly drawn up to exclude the asphalt cement mined in Lake Trinidad from use in Manhattan. This cement was formerly the staple of the asphalt trust, and is now exclusively used by the Barber Asphalt Paving Company.

The specifications also absolutely exclude from use in Manhattan, all asphalts derived from oils, commonly known as the California asphalts.

The Ahearn specifications were first adopted by the Board of Estimate on May 20, 1904, and made applicable to all the boroughs. A week later, on objection by Martin W. Littleton, at that time president of the Borough of Brooklyn, the specifi-

cations were limited in application to the Borough of Manhattan.

Mr. Littleton's objections to the specifications were based on a report respecting them submitted to him by George W. Tillson, then and now chief engineer of the bureau of highways in Brooklyn. Mr. Tillson objected first to the exclusion of Trinidad asphalt, and second to the exclusion of asphalts derived from oils. To exclude Trinidad, he contended, would be to prohibit the use of the material then employed by three paving companies laying pavements in Brooklyn. By excluding asphalts derived from oils, other companies would be deterred from bidding on work. This seemed unwise to Mr. Tillson because, he pointed out, some of the best pavements in Brooklyn are made of oil asphalts. Mr. Tillson believed that the adoption of the specifications would tend to create a monopoly in the asphalt paving business in Brooklyn.

By the adoption of the Ahearn specifications the material available for asphalt paving in Manhattan had been reduced to two or three cements. Notwithstanding the restriction in the kinds of asphalt used, there has been a reduction in the price of this pavement to the city. The average price per sheet asphalt pavement, including only the binder and wearing surface (all the asphalt parts) for the years 1901-1905 in Manhattan, were as follows:

	1901	1902	1903	1904	1905
Per sq.	\$2.98*				
Yard	2.44	\$1.12	\$1.16	\$1.22	\$1.07

A study of various successful bids for sheet asphalt pavement in 1904 and 1905 reveals little variation in the price of the asphalt. Such variations as do occur can generally be accounted for by a corresponding variation in traffic conditions which determine very largely the cost of maintenance under the guarantee. The successful bidders in these years were the following companies:

The Asphalt Construction Company.
 The Barber Asphalt Paving Company.
 The Continental Paving Company.
 The Hastings Pavement Company.
 The Sicilian Asphalt Paving Company.
 The Uvalde Paving Company.†
 The United States and Venezuela Paving Company.‡

*Ten year guarantee; all other prices for 5 year guarantee.

†These two companies are controlled by the same persons.



A stretch of pavement out of maintenance.



Eighth Avenue after the refilling of the conduit trench.

The complete pavement, including concrete foundation, binder and wearing surface cost, in Manhattan, on an average of \$1.54 per square yard in 1905. This price compares with the 1905 price in Brooklyn and in other cities as follows :

City.	Price.	Period of Guarantee.
Manhattan	\$1.54	5 Years.
Brooklyn	1.47	5 "
Boston	3.25	10 "
Buffalo	2.50	10 "
Cincinnati	2.00	5 "
Chicago	2.00	10 "
St. Louis	1.98	10 "
Rochester	1.85	10 "
Washington	1.59	5 "

The above table speaks eloquently for the effect of the reduction in the maintenance or guarantee period in this city from ten and fifteen years, under which the old-time high prices prevailed, to five years. The lower price obtained in Rochester under the 10 year guarantee can be accounted for by the difference in traffic conditions between that city and Manhattan.

It will doubtless appear difficult to reconcile the assertion that a practical monopoly has been established in the supplying of asphalt cement with the low price for the pavement. These low prices are partially explained by the competition between the Barber Company, the former Asphalt Trust, and the so-called independents represented by the various competing companies. It is believed by experts that the present prices either represent cut-throat competition or a failure to live up to the specifications. The bureau of highways is entirely at the mercy of the companies with respect to their fulfilling the requirements of the specifications regarding the asphalt mixture used. The composition of this mixture can only be ascertained by a careful supervision of the process of making the mixture in the asphalt plants. This supervision is practiced by the government authorities in Washington, D. C., where the pavements are admittedly the best in America. In Manhattan the inspection is confined to an examination of the work in progress in the streets. Such examination cannot disclose the nature of the material used, nor is it possible to determine the quality of the asphalt used by even a chemical analysis of the mixture. It is conceivable, therefore, that the companies use poorer material than is required by the specifications, taking care only that the pavement will not be of such bad quality that the cost of maintenance during the guarantee period (5 years) will be excessive.

The bureau of highways both makes new streets and repaves old ones. It also keeps in repair certain roads where gravel or macadam is used. Its responsibility covers the following lengths and yardage of several kinds of pavement:

	Square Yards	Miles.
Specification Granite (Stone Block).....	2,160,224.0	97.33
Square Granite ".....	94,076.7	4.21
Specification Trap ".....	399,513.3	22.74
Belgian Trap ".....	208,457.2	14.57
Sheet Asphalt.....	4,872,567.0	242.74
Block Asphalt.....	478,922.0	23.74
Cobble.....	3,304.9	.79
Wood Block.....	70,448.9	3.51
Macadam.....	893,254.1	17.97
	<hr/> 9,270,768.1	<hr/> 427.60

It will be seen at once that sheet asphalt occupies the most important position in the paving problem. Next in importance are the stone block pavements, of several varieties, which together cover 138.85 miles of streets. This pavement is used for its durability. It is noisy and unsuitable for light traffic. Sheet asphalt is, of course, the most serviceable pavement for general use yet invented. It is capable of an indefinite amount of repairing by the simple insertion of patches. It is fairly non-absorbent and is easily kept clean. The wood block pavement now being used, notably in lower Broadway, is a potential rival of sheet asphalt. At present it is considerably more expensive and largely an experiment. The cobble pavement is a relic of the early practice in street paving. Its continuance on several streets on the East Side is due to the unwillingness of the gas company which owns the abutting realty to submit to assessment for its removal. These streets, having been paved by the company, cannot be paved out of the general funds until an assessment pavement has been laid. The city is, therefore, prevented from substituting a modern pavement for the cobble stones in these streets, because no assessment can be levied without the consent of the property owners.

The block asphalt pavement is considerably more expensive than the sheet asphalt and is used where grades are too steep to permit the use of sheet asphalt and where traffic conditions demand a pavement of its durability. In practice the pavement has been found difficult to keep in repair, after the expiration of the guarantee period, because of the constant variation of the type of block manufactured. In several streets it has been necessary to repair this pavement with patches of sheet asphalt. Its present cost is \$1.60 a square yard, laid.



**Cobble stone pavement laid by the gas company which
refuses to submit to assessment so that a
proper pavement may be laid.**



**Another view of the gas company's contribution to
Manhattan's paving problem.**

Tables of yardage and mileage of pavement in the Borough of Manhattan for five years.

September 30, 1901.

Kind of Pavement.	Square Yards.	Linear Miles.
Specification granite	3,209,454.77	145.48
Square granite	345,302.00	8.68
Specification trap	755,768.05	89.94
Belgian trap	845,786.56	22.00
Sheet asphalt	3,126,711.57	158.84
Block asphalt	214,437.12	11.70
Cobble	7,924.00	1.10
Karri Wood	1,013.10	.08
Macadam	1,040,300.93	22.31
	<hr/>	<hr/>
	9,546,698.10	410.13

December 31, 1902.

Kind of Pavement.	Square Yards.	Linear Miles.
Specification granite	2,926,786.97	133.45
Square granite	329,171.59	7.81
Specification trap	755,768.05	39.94
Belgian trap	695,533.86	13.66
Sheet asphalt	3,576,805.94	178.59
Block asphalt	292,345.29	16.27
Cobble	7,924.00	1.10
Karri Wood	1,013.10	.08
Macadam	1,038,430.46	22.26
	<hr/>	<hr/>
	9,623,839.26	413.16

December 31, 1903.

Kind of Pavement.	Square Yards.	Linear Miles.
Specification granite	2,593,365.40	117.99
Square granite	314,081.44	7.01
Specification trap	673,846.41	35.28
Belgian trap	533,937.58	5.21
Sheet asphalt	4,217,373.19	210.21
Block asphalt	377,703.34	19.23
Cobble	7,924.00	1.10
Karri Wood	1,013.10	.08
Macadam	956,380.59	19.44
	<hr/>	<hr/>
	9,675,625.05	415.55

December 31, 1904.

Kind of Pavement.	Square Yards.	Linear Miles.
Specification granite	2,384,391.71	107.27
Square granite	307,740.44	6.80
Specification trap	559,296.73	28.88
Belgian trap	511,720.18	4.07
Sheet asphalt	4,571,916.68	228.29
Block asphalt	415,524.87	21.41
Cobble	3,304.88	.79
Wood block	21,196.40	1.14
Macadam	935,448.29	18.91
	<hr/> 9,710,540.18	<hr/> 417.56

December 31, 1905.

Kind of Pavement.	Square Yards.	Linear Miles.
Specification granite	2,160,224.00	97.33
Square granite	94,076.70	4.21
Specification trap	399,513.30	23.74
Belgian trap	298,457.20	14.57
Sheet asphalt	4,872,567.00	242.74
Block asphalt	478,922.00	23.74
Cobble	3,304.00	.79
Wood block	70,448.90	3.51
Macadam	893,254.10	17.97
	<hr/> 9,270,768.10	<hr/> 428.60

NEW PAVEMENTS LAID BY PRESIDENT AHEARN.

The following tables were prepared to show the exact amount of paving contracted for by President Ahearn. To secure this information required a laborious examination of over two hundred contracts for the purpose of ascertaining their date of making and completion. The tables for the first time make public the exact amount of paving creditable to President Ahearn's initiative. The reports of the President show only the contracts completed and accepted during the period under review, regardless of whether they were begun in that period or not.

An examination of the tables reveals the fact that more contracts were bequeathed to President Ahearn by his predecessor than the Borough President himself initiated and carried to completion in 1904 and 1905.

**Contracts Completed During 1904 And 1905, But Entered Into Prior To
The Administration Of President Ahearn:**

**Street Improvement Fund.
(Assessment Work)**

	Square Yards.	Linear Feet.	Miles.	No. of Contracts.	Amount.	Av. Price Per Sq. Yd.
Sheet Asphalt	12,686.99	3,400.00	.64	4	\$30,415.27	\$2.39
Asphalt Block	7,823.63	2,308.70	.43	5	26,235.78	3.35
Granite Block	12,123.41	3,745.71	.70	4	44,684.16	3.68

Repaving.

Sheet Asphalt	368,748.20	96,477.40	18.27	88	772,773.02	2.09
Asphalt Block	30,732.60	9,219.80	1.74	13	94,256.19	3.06
Wood Block	11,251.20	3,192.60	.60	3	41,071.82	3.65
Granite Block	16,575.84	5,295.00	1.00	2	60,173.41	3.63

Totals.

Number of Contracts.....	119*
Mileage of Pavement Laid.....	23.38
Amount Expended.....	\$1,069,609.65

**Contracts Entered Into And Completed During The Administration Of
President Ahearn, In 1904 And 1905:**

**Street Improvement Fund.
(Assessment Work.)**

	Square Yards.	Linear Feet.	Miles.	No. of Contracts.	Amount.	Av. Price Per Sq. Yd.
Sheet Asphalt	3,502.20	458.00	.08	1	\$6,801.70	\$1.94
Asphalt Block	18,794.04	4,906.22	.93	7	49,060.61	2.61
Granite Block	10,843.90	3,011.80	.57	4	38,883.38	3.58
Macadam	28,079.70	6,055.00	1.15	1	58,858.21	2.09

Repaving.

Sheet Asphalt	254,798.90	66,401.70	12.57	71	451,980.39	1.77
Asphalt Block	42,738.70	6,492.50	1.22	4	102,344.17	2.39
Wood Block	59,172.60	15,255.20	2.88	10	243,919.66	4.12
Granite Block	19,600.60	5,938.40	1.13	6	58,779.78	3.00

Totals.

Number of Contracts.....	104
Mileage of Pavement Laid.....	20.53
Amount Expended	\$1,010,627.90

*Five of these contracts were actually completed in 1903 but the work was not accepted until 1904; while in the case of ten others, part of the work was done in 1903 and part in 1904.

The method of bookkeeping employed in the office of the borough president does not permit of a comparison between the engineering expenses and the total cost of the work. The total expenditures for salaries in the bureau of highways for the years 1904-1905 is not chargeable to work done in paving and repaving. The staff gives also considerable attention to supervision of the maintenance contracts, to restoration of pavements opened by corporations, and the like. The engineering charge is an item which the accounts of the borough president should reveal.

The total appropriations for paving work in Manhattan for the years 1902-1905 were as follows:

Making new streets, grading, curbing, etc.

Street Improvement Fund.

(These amounts are met by assessment bonds and are later recovered in full by the city through special assessments made upon the property benefited. These assessments become liens against such property.)

1902.....	\$447,820.94
1903.....	409,315.29
1904.....	644,203.12
1905.....	689,180.97
	<hr/>
	\$2,250,520.32

On October 28, 1904, \$25,000 was appropriated by the Board of Estimate and Apportionment for a special fund for restoring pavements damaged by contractors during building operations, in cases where the contractors failed to make satisfactory restoration of the pavement. The amounts so expended become liens against the property.

Repaving, Repairing, Regrading And Maintenance Of Highways.

1902.

Corporate Stock	\$1,200,000
Revenue Bonds .....	.....
Budget	610,108
	<hr/>
Total for 1902.....	\$1,810,108

1903.	
Corporate Stock	\$1,913,000
Revenue Bonds .....	.....
Budget	552,108
Total for 1903	<u>\$2,465,108</u>

1904.	
Corporate Stock	\$900,000
Revenue Bonds	50,000
Budget	602,108
Total for 1904	<u>\$1,552,108</u>

1905.	
Corporate Stock	\$1,714,000
Revenue Bonds	210,000
Budget	595,108
Total for 1905	<u>\$2,519,108</u>
Total for four years.....	8,346,432
Average per year	2,086,608

THE MAINTENANCE OF THE PAVEMENTS.

In 1902, President Cantor made a radical change in the system under which the sheet asphalt pavement is maintained. The older forms of contracts for sheet asphalt provided for maintenance by the contractor for ten and fifteen years, but the guarantee period was then reduced to, and now remains at, five years.

In the fifteen-year form of contract for sheet asphalt, 20 per cent of the contract price was retained by the city after the street was accepted in order to guarantee the fulfillment of the maintenance clause. The payment of the money retained was not begun until after five years when settlement was made in either half-yearly or quarterly installments.

In the ten-year form of contract, 80 per cent of the contract price was paid upon the acceptance of the pavement, the balance (20 per cent) being paid in annual installments.

The long term guarantee proved a failure. High initial prices were paid for pavements, but the contractors neglected to make repairs promptly and regularly, and it frequently hap-

pened that pavements were practically worn out at the end of guarantee periods.

A reduction was, therefore, made in the term of years for which a contractor was required to keep the pavement laid by him in good condition. Even now great difficulty is encountered in keeping alive the contractor's interest in his pavement.

The present form of five-year guarantee contract permits the city to retain 20 per cent of the contract price for one year. After that period the contractor is under bond to carry out provisions of the maintenance clause which expires five years from the date of the acceptance of the pavement.

Full payments of the contract price are made on acceptance of the pavements in the case of asphalt block and wood block pavements. Asphalt block is laid with five-year maintenance guarantee and wood block with ten. No satisfactory reason can be found for returning to the ten-year maintenance in the case of wood block pavement. The average price for this pavement per square yard was, in 1905, \$4.10, including concrete foundation. It cannot be questioned that the obligation to maintain the pavement for ten years results in an increased initial price.

The whole contract price is paid for granite block pavement on acceptance of the work, the contractor being required to maintain the pavement in good condition for one year only. After the expiration of one year the bureau of highways makes the repairs on this pavement. The work is done by a gang of mechanics and laborers under the direction of the superintendent of highways. In 1904 the average cost in labor alone for relaying one square yard of stone pavement was \$1.52. In 1905 the cost rose to \$1.54.

Repair Gang, Bureau Of Highways.

	1904.			
	Mechanics.	Laborers.	Horse and Cart.	Teams.
Quarter ending March 31.....	246	214	78	5
Quarter ending June 30.....	252	210	98	6
Quarter ending September 30.....	259	212	103	7
Quarter ending December 31.....	260	211	101	7
Square yards of pavement taken up and relaid in year.....	244,960			
Payroll for the year	\$372,876.93			
Cost per sq. yd. of relaying stone pavement on the basis of the payroll	\$1.52			
Average mechanics for four quarters	466			

1905.				
	Mechanics.	Laborers.	Horse and Cart.	Teams.
Quarter ending March 31.....	250	187	63	1
Quarter ending June 30.....	248	195	100	5
Quarter ending September 30.....	260	187	116	5
Quarter Ending December 31.....	258	177	114	6
Square Yards of Pavement taken up and relaid in year.....				262,716
Payroll for the year				\$405,020.45
Cost per sq. yd. of relaying stone pavement on the basis of the payroll				\$1.54
Average mechanics and laborers for four quarters.....				441

It will be observed that while the laboring force was reduced by 25 in 1905 from 1904, the quantity of pavement taken up and relaid was greater by 17,756 square yards than in 1904. Notwithstanding a smaller average of men engaged upon this work in 1905 than in 1904 there was an increase in 1905 of \$32,143.52 in the payroll over 1904.

The Borough of Manhattan has no organization or plant for repairing asphalt pavements, and when streets revert to the care of the city after the expiration of the guarantee, a repair contract is made on the basis of the square yards actually restored. The yardage to be repaired during the term of the contract is approximately estimated by the bureau of highways before the contract is awarded.

Such repairs are guaranteed only during the term of the contract which is now made year by year. The present contract (1906) was awarded to the Uvalde Company at the rate of 75 cents per square yard restored. The inspectors of the bureau designate the parts of the pavements to be restored and are required to measure the area repaired. No discrimination is made with respect to the causes of the defect under the general repair contract. The work of repairing involves only the replacing of binder and wearing surface, the foundation of cobble, stone block or concrete being usually intact. By the end of 1906, 650,000 square yards of asphalt pavement will be under the care of the bureau of highways, the guarantee of the original pavers having expired.

Considerable difficulty is experienced in keeping the pavements under maintenance in good condition. The contractors are liable only for defects which occur from ordinary wear and tear. It is frequently difficult to determine the causes of defects. Often the pavement is injured by bonfires and the burning of rubbish in the street by irresponsible or malicious persons.

The chief injury to the pavement is caused by openings made by corporations and city departments to gain access to gas mains, electric light and telephone conduits, water mains, sewers, and the like. This problem is discussed below under the head of 'pipe galleries.' It is necessary to give here, however, certain facts respecting the methods employed to minimize the damage done the pavements.

It is within the power of the borough president to prohibit the opening of the street surfaces. This he sometimes does when he wishes to preserve from injury a newly laid pavement. It is obvious, however, that in case of emergency access must be had to the sub-surface works no matter how recently the pavement had been laid. The public service corporations, gas, electric light, telephone, etc., are granted permits to open the streets by the borough president. When the pavement is under maintenance guarantee the corporation becomes liable to the paving company to the extent of the damage done. The city receives no return for the permit to open streets granted these corporations but exacts a bond for the proper compliance with the condition of the permit, including the restoration of the pavement. In the case of cuts made by the city departments, the repairs are made at the city's expense, under the general maintenance contract.

The bureau of highways assumes responsibility for the restoration of pavement removed by plumbers and others than city departments and the public service corporations. Regular charges are made for these permits varying with the amount of pavement likely to be disturbed. The cost of restoring the pavement is covered by the charges. If an excessive amount is found to have been required of the applicant restitution is made.

It is contrary to ordinance for an opening to be made in the street without a permit from the borough president, except in emergency during the hours when the borough president's office is closed. It is the duty of the police to prevent the opening of street pavements where no permit or urgency can be shown.

The following are the charges made for plumbers' openings :

Sheet asphalt for water connection; 8 sq. yards.....	\$36.00
Sheet asphalt for sewer connection; 12 sq. yards	54.00
Wood or asphalt block for water; 10 sq. yards	40.00
Wood or asphalt block for sewer; 16 sq. yards	64.00
Granite block for water; 4 sq. yards, \$8 for first yard and \$4 a yard for the rest, equalling.....	20.00
Granite block for sewer; 6 sq. yards, \$8 for the first yard and \$4 a yard for the rest, equalling.....	28.00
Old stone pavement; sewer repairs,	10.00
Old stone pavement; water repairs,	4.00
Old stone pavement, new connection from curb to main.....	6.00
Macadam, a running foot,	2.00



A part of the Lexington Avenue trench. Notice the incumbrance of the sidewalk and roadway with excavated material.



**What happens to the sidewalk when conduits are laid.
Lexington Avenue, west side, south
from 35th Street.**

The revenue derived from this source was:

In 1904	\$153,703.00
In 1905	170,474.00

No limitation is placed by ordinance or regulation upon the amount of pavement that a corporation may open at one time. It was stated in the office of the chief engineer that usually five or six blocks are opened at one time, but that longer openings are permitted if it is believed that the work can be done more quickly in consequence. It is known what these openings entail. In some instances they practically close whole streets to traffic.

It is believed that public welfare warrants the imposition of vigorous restrictions upon the companies making these openings. It is asserted on good authority that the work could be as economically accomplished if one block was opened at one time, the cut in that block being filled before the next block is opened. A flagrant example of the abuse of this privilege to open the street surface was exhibited by a conduit company which tore up Eighth and Lexington avenues from end to end this spring. A careful examination of this work was made by the Bureau of City Betterment. On Lexington Avenue from 32d street to 86th street, on April 18, a distance of 54 blocks, trenches were dug and open in 32 blocks, while the materials for constructing the conduits were stored along the street for the entire distance examined. The street was found opened by blocks as follows:

5½ blocks unopened;	4½ blocks opened.
2 blocks unopened;	12½ blocks opened.
4½ blocks unopened;	6 blocks opened.
4 blocks unopened;	9 blocks opened.
7 blocks unopened.	

Eighth Avenue from 14th Street to 124th Street was found on the following day as follows: Open in 62½ blocks; refilled in 28½ blocks; intact in 20 blocks out of a total of 111.

These excavations are made along the roadway near the curb. The piling of dirt and rubble on the margin of the excavation, which is usually between two and three feet wide, renders fully one-half of the street impassable. It is a commonplace that it is impossible to refill a cut in the street so compactly that no settlement will occur after the pavement is replaced. The settlement always occurs. The paving companies usually postpone the repaving as long as possible after the cut is made so that the earth may solidify. In the meantime the

opening is covered with a temporary pavement of irregularly set stone blocks. These half-restored cuts are dangerous, unsightly and injurious to the surrounding pavement. The constant opening of the street pavements, therefore, involves not only temporary inconvenience to traffic of greater or less degree, but permanent injury to the highways.

Possibly the extent to which the practice of cutting into pavement has grown can best be shown by presenting the figures published by the bureau of highways. In 1902 the total length of trenches opened in the streets for mains was 98.88 miles; in 1903, 96.117 miles; in 1904, 87.907 miles; in 1905, 108.725 miles. The following tables reveal the number of pavement openings and also show that most of the work of destruction was performed by public service corporations.

Summary Of Pavement Openings.

1902.

	Made by Corporations.				Made by City De- partments.		
Classi- fication.	Elec- tricity.	Gas.	Steam.	Other Pur- poses.	Water.	Steam.	Total
Mains to lay and overhaul.....	577	189	4	2	1,436	272	2,480
Made by Plumbers.							
Services, to lay and repair.....	4,890	14,279	620	4	1,483	750	22,020
Total.....	5,467	14,468	624	6	2,919	1,022	24,506
Railways, to con- struct and repair.	.....	.....	....	..	.....	.....	10,155
						Total	34,661

1903.

Classi- fication.	Made by Corporations.				Made by City De- partments.		
	Elec- tricity.	Gas.	Other Pur- Steam. poses.	Water.	Sewer.	Total.	
Mains to lay and overhaul.....	891	232	5	7	1,414	285	2,834
Made by Plumbers.							
Services, to lay and repair.....	6,097	12,810	480	..	1,204	678	21,269
Total.....	6,988	13,042	485	7	2,618	963	24,103
Railways, to con- struct and repair.	.....	.....	....	..	.....	.....	8,134
Total,							32,237

1904.

Classi- fication.	<i>Made by Corporations.</i>				<i>Made by City De- partments.</i>		Total.
	Elec- tricity.	Gas	Steam.	Other Pur- poses.	Water.	Sewer.	
Mains to lay and overhaul.....	92	151	4	21	3,044	302	4,450
<i>Made by Plumbers.</i>							
Services, to lay and repair.....	7,407	11,802	627	..	1,772	769	22,377
Total.....	8,335	11,953	631	21	4,816	1,071	26,827
Railways, to con- struct and repair. ....	.....	.....	....	..	.....	.....	2,501
Total,							29,328

1905.

Classi- fication.	<i>Made by Corporations.</i>				<i>Made by City De- partments.</i>		Total.
	Elec- tricity.	Gas.	Steam.	Other Pur- poses.	Water.	Sewer.	
Mains to lay and overhaul.....	1,612	169	14	62	2,050	145	4,052
<i>Made by Plumbers.</i>							
Services, to lay and repair.....	8,798	10,325	547	..	1,662	1,067	22,399
Total.....	10,410	10,494	561	62	3,712	1,212	26,451
Railways, to con- struct and repair. ....	.....	.....	....	..	.....	.....	3,937
Total,							30,388

PIPE GALLERIES.

It is certain that New York, and especially the borough of Manhattan, can never have good or lasting pavements so long as it is necessary to disturb street surfaces for the purpose of laying and repairing, or connecting gas, water and steam mains, pneumatic tubes, electric and other conduits. The constant cutting of pavements causes great inconvenience to the public, makes the city's streets unsightly and often unserviceable, deteriorates and gradually destroys the paving material, be it

Note—The above summaries do not include openings in the surface of pavements made by the bureau of highways and the asphalt companies for the purpose of repairing defects due to ordinary wear, nor openings to repair sidewalks, nor openings for temporary encumbrances, such as poles to support banners or derrick guys.

asphalt, wood or granite. It is an unscientific and expensive procedure, but it must ever continue, if conditions remain unaltered, because the life of the city depends in large measure upon the maintenance of sub-surface utilities, by means of which heat, light and power are furnished to a multitude of consumers.

To solve the problem involved in the cutting of pavements a system of pipe galleries has long been advocated. Pipe galleries are underground tubes, comparable in principle to a railway subway or a large sewer, which are provided with racks to carry gas water and steam pipes, and telegraph, lighting and telephone wires, in short, all the underground systems with the exception of the sewer. The inclusion of the sewer is not impracticable. Access to these galleries is had from openings in the sidewalk or street. The various pipe and wire systems are, in this way, capable of easy repair and frequent examination. If such galleries were built under every important thoroughfare, of a size large enough to carry all the pipes and conduits now buried in the earth beneath the pavements, the maintenance of street surfaces would undoubtedly be a simple and inexpensive matter, and there would consequently be a smaller outlay for new pavements. Moreover, as the sub-surface structures, including those belonging to the city, would thus be open at all times to inspection, their maintenance as well would be more efficient and less expensive. It is hardly necessary to point out, also, how the appearance of the city would be improved if the ugly, ill-smelling street trenches, piled high on all sides with earth and rubble, could be entirely eliminated.

The cost of providing pipe galleries throughout Manhattan would, undoubtedly, be enormous. Against this initial cost would be set the vast saving to the city in the matter of undisturbed pavements, the prevention of leakage from the water mains and a considerable revenue derived in the form of rent from those public service corporations whose underground systems would find a place in the galleries. Notwithstanding the many advantages which pipe galleries would offer, it is recognized that their immediate construction is less pressing than the provision of adequate rapid transit facilities, and that the diversion of the city's funds from rapid transit purposes to pipe galleries cannot be recommended. Nevertheless, it is strongly urged that pipe galleries receive the attention of the rapid transit authorities and that they be incorporated in any underground railway system that these authorities may cause to be built.



A carelessly covered trench endangering traffic.



Laying a water main under the street pavement.



A stone block backbone in an asphalt pavement; the result of laying a water main.



A congeries of refilled trenches.

Pipe galleries are not an experiment. They have existed for many years in several English and European cities, and afford the relief from pavement destruction so desired in New York City, besides furnishing a simple medium by which street services may be inspected and repaired. In New York the chief opponents to pipe galleries are certain corporate interests. These interests are the companies which own the conduits carrying electric wires, and those which supply gas.

In both cases the corporations are actuated by selfish motives. Pipe galleries would threaten the existence of the monopoly of the electric subway companies, and would also compel the gas companies to maintain leakless distribution pipes. The subterranean leakage of gas affords a further argument in favor of the urgent necessity for building pipe galleries. As a rule, a gas company does not attempt to repair a leaky main unless the loss of its product is abnormal. Consequently, an immense quantity of gas—one estimate is three thousand millions of cubic feet a year—is diffused in the earth all over the borough. In the days when the city was paved with cobble stones, leaking gas could escape through the surface of the streets, but since impervious pavements, such as asphalt, have been laid, the gas has been forced to find other outlets. Leaking gas follows the path of least resistance. Some of it finds its way into cellars and sewers and some accumulates in pockets directly over the leaky main and beneath the impervious pavement. If the pavement is asphalt the solvent in the gas produces decomposition. First binder and then asphalt wearing surface is attacked. Depressions in the pavement follow, and these soon become holes. When the solvent is exhausted the gas remains highly inflammable, and therefore is still a dangerous factor if introduced into sewers or the basements of buildings. Gas leakage is, therefore, a matter concerning both the highway engineer and the fire underwriter. It is a well-established fact that it causes pavement deterioration, and it is the opinion of the National Board of Fire Underwriters that the fire risk due to gas leakage should be seriously considered. It is, however, a condition that can be eliminated by the building of pipe galleries and the placing therein of all gas mains, which might then be kept wholly free from leakage.

The pipe gallery scheme has still another side. If these chambers were built it would be possible to get rid of most of the different varieties of manholes now to be found in the streets. At the present time there are water, gas, telegraph, telephone and sewer manholes scattered over the pavement at intervals of a few hundred feet. All of these have removable

covers, which when newly set, are nearly level with the street surface. As the covers are made of iron they naturally withstand the wear and tear of traffic better than the asphalt. Trucks and wagons bump over the covers, strike the pavement, and cause depressions which soon become holes. Although they cause great injury to the pavement, these manholes are necessary under the present system of underground engineering. If, however, the sub-surface structures were placed in the pipe galleries probably one manhole cover would be necessary where four now exist.

It has been suggested that pipe galleries be built in connection with the rapid transit subways; in fact, the borough would now be in possession of at least one gallery but for the opposition of several departmental heads. In the general plan for the Elm Street subway route, the board of rapid transit commissioners reserved the power to cause pipe galleries to be prepared, but did not include in the contract any requirement that they should be constructed. Later the matter was brought to the attention of the board, and the chief engineer was ordered to make an estimate of the cost of the construction of pipe galleries from City Hall Park to Thirty-third street. He reported on March 16, 1900, that the cost of the galleries would probably not exceed \$850,000, and that there was no need for galleries below Worth street. A further report by the chief engineer said he deemed it necessary to have pipe galleries along Elm Street, from Worth Street to Astor Place, and that they would cost about \$425,000.

Accordingly, the board communicated with the contractor, who agreed to build the galleries and actually entered upon the work of construction, making some progress. On November 1, 1900, however, the board was notified by the commissioner of sewers that he objected to the plans for the pipe galleries. The chief engineer of the department of water supply also voiced his objection to the scheme. As the pipe gallery plan had been widely published, and encountered no opposition, these belated protests were a surprise to the rapid transit commissioners, who thereupon sounded all the city departments interested. These authorities expressed doubt as to the practicability of the galleries, and also raised certain questions concerning the control after construction. Then the contractor asked permission to discontinue work because of engineering obstacles and the attitude of the authorities. This permission was granted and the galleries were abandoned.

After this fiasco the pipe gallery proposition languished until Borough President Cantor took office, as the city au-



Waiting for a corporation cut to 'settle.'



Murray Street, looking west to Church Street, showing condition of wood block pavement relaid over recent trench openings. The condition of the pavement is very much worse than the photograph shows.



A refilled trench in a narrow, busy street.



A ruined street caused by the laying of a water main.

thorities apparently did not want them and the Rapid Transit Act did not confer upon the board the power to build galleries except where necessary as a part of railroad subways. Mr. Cantor retained Dr. James C. Bayles to prepare plans for a gallery from Ann Street to Wall Street, to be built at the same time as the subway spur between those points. Funds were voted for the work, and advertisements for bids were published, but suit was begun in the Supreme Court by a taxpayer and an injunction obtained against the construction of the proposed galleries upon the ground that the commissioner of water supply, gas and electricity and not the borough president had charge of the matter.

The last Legislature, in amending the Rapid Transit Act, gave the board of rapid transit commissioners power to build pipe galleries in connection with all new subways, but it is a question whether this work will be done unless the city authorities in charge of sub-surface structures demand chambers for them. As the officer controlling the pavements and the sewers, it is certainly the duty of the Borough President to advocate pipe galleries. That part of the sewer system which must necessarily be rebuilt in connection with the new subways might even be made an adjunct of future pipe galleries.

The Borough President is well acquainted with the facts. He knows that pavement deterioration and destruction will continue indefinitely unless pipe galleries are built. While he has no legal power to undertake the improvement he can at least take the initiative in fostering it. His official position is such that his advocacy of pipe galleries would have to be seriously considered by the rapid transit commission. Because this disposition of sub-surface works forms the solution of maintaining the pavements, and because the Borough President is morally bound to conserve this valuable property, he cannot allow the matter to rest undisturbed without laying himself open to the charge of indifference to the city's interests.

CORPORATION INSPECTORS.

In connection with the opening of street surfaces by corporations, there remains one more point for discussion. This relates to the inspection of the work done by corporations under permit from the borough president. Any work which involves the disturbance of the surface of streets by corporations holding franchises is carried on under the supervision of corporation inspectors, who are appointed by the borough president, but are paid by the companies whose work they pass upon.

While corporation inspectors are not specifically mentioned in the charter, the reason for their appointment is found in section 391, which reads in part as follows:

"No removal of the pavement or disturbance of the surface of any street for the purpose of constructing vaults or lateral ways, digging cellars, laying foundations of buildings or other structures, making sewer connections or repairing sewers or pipes, of laying down gas and water pipes steam pipes and electric wires, or introducing the same into buildings, or for any purpose whatsoever, shall be made until a permit is first had from the president of the borough where the work is to be done. . . . But nothing herein contained shall be deemed to prohibit said borough president from demanding, before issuing said permit, and as a condition thereof, the deposit of such sum of money or other security, as, in his judgment, may be necessary to pay the cost of properly relaying the pavement so removed, together with the expense of the inspection thereof."

The 'corporation' inspectors see to it that the corporations perform the work of laying pipes or conduits in the streets or repairing their sub-surface works according to the provisions of the permit issued by the borough president. They have to do only with the openings in pavements made by the corporations. They are supposed to see to it that the pavement is properly restored, but this work devolves largely upon the regular inspection force of the bureau of highways. The work assigned to the corporation inspectors is similar to that of the regular highway inspectors. Being political appointees in every respect, they are required to have none but political qualifications. Their authority is limited to stopping work done in violation of the terms of the permit. The compensation of the corporation inspectors is \$4.00 a day for short jobs and \$100 a month when a piece of work, such as the laying of conduits for electric wires, is likely to cover a long period.

The appointment of corporation inspectors forms the only extensive field of patronage left for borough presidents and their adherents. The men are not civil service employees and their names do not appear in the civil list published half-yearly. Their status is seemingly absurd. While actually employed to safeguard the city's interests, they are paid by the corporations whose work they are supervising. They hold a double allegiance, as it were, although it is contended that, politically, they naturally remain true to the interests of the persons who have power to appoint or dismiss them. For several years the Civil Service Reform Association has endeavored without success to have the Legislature place the corporation inspectors under the civil service rules, its annual bills being subjected to strong influences from persons who feared a loss of patronage. The measure drafted by the Civil Service Reform

Association would still permit the payment of the inspectors by the corporations. There is some difference of opinion as to whether the inspectors can properly be called city employes as they were paid by the corporations, but the courts have still to decide this point.

The number of corporation inspectors employed in Manhattan fluctuates between 40 and 45. As most of the sub-surface work in the streets is done during the spring and summer months, the inspectors find those seasons the most profitable. While the inspectors are useful as a means of distributing patronage, they are to some extent a source of annoyance to the borough presidents. Naturally, all of the inspectors wish to have steady employment, but if there is not enough work to go around there is bound to be a certain amount of favoritism shown in making assignments. This leads to dissatisfaction, which is likely to result in demoralization among the men who work perhaps only two or three days a week.

The system of inspection by the so-called corporation inspectors does not serve, in the slightest way, to safeguard the interests of the city in restoring cuts in the pavement. It is an unbusiness-like and unprofitable method of dealing with the problem of paving restoration. It is of the greatest importance that the damage to street pavements by public service corporations should not only be as greatly restricted as possible, but that every precaution be taken to insure a workmanlike and expeditious repair of the damage done. It would be more equitable to charge the cost of legitimate inspection by city employes to the company, making its payment a condition of the permit, compliance with which it insured by a bond. The present method of entrusting the work of inspecting to political parasites not only does not subserve the city's interests but savours of a petty tax upon the corporations by the borough president. In some instances the corporations are required to pay but little more for the restoration of the pavement than they pay for the 'inspection.'

THE CONDITION OF THE PAVEMENT IN THE STREETS BELOW FOURTEENTH STREET AS SHOWN BY AN INSPECTION MADE BY THE BUREAU OF CITY BETTERMENT.

In the absence of records in the bureau of highways from which conclusions could be drawn, it was sought to determine the condition of pavements under maintenance contract (guarantee). A total of 220 blocks south of Fourteenth Street were examined, of which 37 per cent were adjudged to be in

good condition. The examination having been made in May, considerable work had already been done by the asphalt companies to repair the winter's wear. Incidentally, notes were made of the condition of 19 blocks on which the maintenance guarantee had expired and 95 blocks of stone pavement, all of which are in the care of the bureau of highways. It was found that only 3 per cent of these streets were in good condition.

It is needless to state that by means of anything short of a careful survey it is impossible to determine the exact condition of the highways. A conscientious visual examination will, however, easily discriminate between a pavement in perfect condition and the various degrees of disrepair in which the city's highways fall. The detailed results of this investigation were submitted to the chief engineer of the bureau of highways, George M. Olney, who reports that his bureau has investigated the streets designated as needing repairs and ordered repairs to be made accordingly.

Summary Of Inspection.

Type of Pavement.	No. of blocks in good condition.	No. of blocks in fair condition.	No. of blocks va- rying from fair to poor.	No. of blocks in poor condition.
Streets Under Maintenance.				
Sheet Asphalt	52	57	37	42
Asphalt Block	5	1	..	..
Wood Block	25	1	..	..
	<hr/>	<hr/>	<hr/>	<hr/>
Total	82	59	37	42
Percentage of blocks.....	37%	27%	17%	19%

Streets Not Under Maintenance.

*Stone Block	2	19	22	52
Sheet Asphalt	2	3	1	13
	<hr/>	<hr/>	<hr/>	<hr/>
Total	4	22	23	65
Percentage of blocks.....	3%	19%	20%	57%

MAINTENANCE OF MACADAM STREETS.

The maintenance of the eighteen miles of macadam and gravel roadways and the twenty miles of dirt roads in the Borough of Manhattan, is in control of the division of streets

*The condition of only a small number of blocks paved with stone was recorded. This pavement being entirely maintained by the bureau of highways' force cannot properly be compared with the pavement maintained under the general repair contract.



A corporation cut covered with stone block, awaiting settlement.



Building material placed on unprotected pavement.

and roads of the bureau of highways. Both in 1904 and in 1905 an average of 172 workmen and 53 teams were employed in this work, which consisted of repairing washouts and gutters, relaying flaggings, and sprinkling, scraping, and rolling the roadways. Two appropriations are used by the division of streets and roads, which expended in 1904 and 1905 the following amounts.

For Maintenance Of, And Sprinkling Roads, Streets And Avenues,
Unpaved.

	1904.	1905.
Payroll	\$34,981.37	\$34,963.25
General Disbursement .....	.....	.....

For Maintenance Of Boulevards, Roads And Avenues.

	1904.	1905.
Payroll	\$100,887.06	\$99,857.48
General Disbursements for supplies, repairs to tools, etc., without contract.....	13,247.90	11,126.43
Total	\$114,134.96	\$110,983.91

In the case of each appropriation the expenditure for 1905 was less than it was in 1904.

THE INCUMBRANCE OF THE HIGHWAYS.

The problem of restricting the incumbrance of the roadways and sidewalks of the borough with private property is one which requires unintermittent attention. The extensive building operations in Manhattan entail the constant use of parts of the highways for the storage of building materials. Merchants must be watched or they will unduly occupy the sidewalks before their stores for the display of their wares. That the administration of the law is lenient with respect to incumbrances of the roadways is evidenced by the practice of permitting petty merchants to sell goods from portable stands—pushcarts—on most of the crowded East Side streets and in many of the public squares and thoroughfares throughout the borough. With the exception of the streets along the water front, the use of the highways for the storage of carts and trucks when not in use, at one time a most serious abuse, has, during the past several years, been pretty thoroughly abated.

By reason of conflicting charter provisions, the city supports two bureaus of incumbrances in the Borough of Manhattan. By virtue of section 547 of the charter all powers and duties relating to the removal of incumbrances and the issue of permits to builders to use the streets devolves upon the commissioner of street cleaning, in the boroughs to which his authority extends, while section 383 gives to the respective borough presidents control of the removal of incumbrances and the right to issue permits to builders and others to use the streets.

The commissioner of street cleaning exercises his power to cause the removal of incumbrances and has a bureau for this work in Manhattan, but he does not attempt to issue building permits, leaving this function to the borough president, who also has a bureau of incumbrances.

The methods of the rival bureaus afford a contrast indicating that the work might be done more effectively and at a smaller expense to the city by one department. At present there is no co-operation and one bureau does not know the intentions of the other, although the borough bureau can always be certain that the street cleaners will not take incumbrances from the sidewalk. This lack of co-operation results in a duplication of work and a waste of energy.

For instance, a borough inspector may find that a builder is violating the terms of his permit by using too much of the street for storage purposes. A short time afterwards a street cleaning inspector may discover the same violation. Unknown to each other, both men decide that the incumbrance should be removed. The borough inspector notifies his bureau, which then endeavors to serve notice upon the owner of the incumbrance, telling him that unless he removes it forthwith a seizure will be made. In the meantime the street cleaning inspector has also been active, and his bureau, which serves no warning notices, proceeds summarily to remove the incumbrance. Consequently, no violation may exist by the time the notice of the borough bureau has been served. If there were some definite arrangement between the bureaus as to the materials to be removed by each, such occurrences would be avoided and a greater benefit to the city would result.

The material removed by the borough bureau is of little value. It consists largely of dirt, stone, rubbish, fallen trees, dangerous stumps, deserted newstands, signboards, and furniture abandoned by dispossessed families. The street cleaners,



A sidewalk incumbrance for business purposes.



Building material piled on wood block pavement without the protection required by law. The sidewalk obstructed with building material.

on the other hand, seize building materials, merchandise, deserted trucks and wagons, milk cans, and other things of value; in fact, the street cleaners rarely seize anything that is worthless. As a consequence, the receipts of the street cleaning bureau are far in excess of the borough president's bureau, as the following table relating to Manhattan will show:

	1904.		1905.	
	Borough Pres.	Street Cleaning.	Borough Pres.	Street Cleaning.
Incumbrance Redemptions	\$769.00	\$9,187.30	\$710.00	\$12,522.55
Incumbrance Sales	135.50	673.73	396.32	1,211.20

Undoubtedly, the greater activity of the street cleaning bureau is due to the fact that it is better equipped to handle the work of detecting and removing incumbrances than its rival. Every street cleaner is more or less of an incumbrance inspector, as he is constantly at work on the pavements and can therefore report upon obstructions as soon as they appear. Moreover, the street cleaners have at their command a large number of horses and carts, so the removal of seized articles is a simple matter.

The borough president's bureau has no carts or horses, and but six inspectors, who cannot be expected to compete with the army of street cleaners. Every policeman should, however, be an inspector for the bureau because the incumbrances without permits are clear violations of the law. The incumbrances detected by the bureau are removed by a private truckman, whose fees are based upon the size of the obstruction and the time and labor consumed in its removal. No contract is let for the work, which is usually done by a truckman named P. Corrigan. A table at the end of this chapter shows that the average cost of removing incumbrances and loads of dirt and rubbish was greater in 1905 than it was in 1904.

It is probable that the framers of the charter intended that the department of street cleaning alone should attend to the removal of incumbrances, for they devised legal procedure to be followed by the commissioner in seizing, selling, and permitting the redemption of the seized property, the commissioner being allowed to fix the redemption fee, which must not exceed \$10 for each article.

So far as the borough president is concerned, there is no section of the charter defining his duties in relation to the removal of incumbrances, the matter being dealt with in these words: "He shall have cognizance and control of the removal of incumbrances." Although freed from legal restrictions the borough president cannot exercise any arbitrary power, because of the small value of the articles he seizes. His redemption fees for incumbrances depend upon the cost of their removal and the labor involved, the fees being fixed by the superintendent of incumbrances. Property seized by this bureau is held thirty days for redemption, but it is customary to have only two sales a year in order that a good showing of merchandise may be made.

The utility of two such bureaus is questionable, but as long as they legally exist they should find means to co-operate instead of blindly working along independent lines. A simple arrangement between the commissioner of street cleaning and the borough president is all that is necessary to render the work of the bureaus more effective, and it is recommended that these two officials confer on the matter.

Permits Issued By Bureau Of Incumbrances.

As the department of street cleaning does not issue permits to builders, the Bureau of Incumbrances spoken of hereafter is that of the Borough President. Three classes of permits are issued by the bureau, as follows:

- (1) Building material permits.
- (2) Permits to erect temporary sheds over sidewalks.
- (3) Permits to cross sidewalks with carts.

No charge is made to persons who receive permits to place building materials in the street, but a bond or certified check must be deposited with the commissioner of public works to insure payment for any damage to the pavement. One of the conditions of such permits is that asphalt pavements must be properly covered with planking before the materials are placed thereon. The grantee is not allowed to occupy more than one-third of the carriageway in front of the premises named in his permit, and he is required at all times to keep the sidewalk free and clear for pedestrians. A building permit is issued for thirty days and can be extended from time to time.





Pedestrians protected from falling building material.



A sidewalk bridge over an excavated vault.

The greater part of the work of the force of incumbrance inspectors concerns the holders of building permits. Builders frequently try to annex more than one-third of the street, and many of them are not too careful about protecting asphalt pavements. Under the present system a builder may store tons of material in a public highway for months at a time without cost to himself. If his permit is revoked for violation of conditions, he is placed under some expense for the removal of his materials, and the same is true when he is obliged to redeem seized articles. But as he can lose no fee by the revocation of his permit and can secure a renewal by promising to observe the proper rules in the future, he is not impressed with the desirability of being careful of his privilege. It would seem good policy, therefore, to charge a substantial fee for building material permits. Such an arrangement would undoubtedly have the effect of increasing the value of the privilege in the eyes of the person holding it. It may be argued that the builder's bond protects the city. It does so far as repairs to damaged pavements are concerned, but it does not contain a penalty for the use of an excess street area, nor one for blocking the sidewalk and causing inconvenience to the public.

A fee of \$5 is charged for the second class of permits, which allows the erection of temporary roofs or sheds over the sidewalk in front of buildings in course of construction. Such permits remain in force during the actual progress of the work. As temporary sheds are a protection to the public as well as a convenience to the builder, there is less reason for the fee of \$5 than there would be for a fee in connection with building material permits, which represent a valuable storing privilege.

The third class of permits issued by the bureau of incumbrances allow persons to cross sidewalks with horses and carts. The holder of such a permit is not allowed to disturb the sidewalk flagging, but is required to cover it with planks. He is also required to file a bond or deposit a certified check for \$25 with the commissioner of public works, to cover all possible damage to the sidewalk. No fee is charged for the privilege, although the occupancy of a sidewalk is undoubtedly an inconvenience to the public.

It is suggested that the right to issue permits for the placing of candy booths and newstands on the sidewalks, which now forms a profitable source of patronage for aldermen, might be delegated to the bureau of incumbrances, which has to remove such property when it is abandoned by the owners.

In the following tables will be found the numbers of permits issued in 1904 and 1905, the revenue derived from temporary shed permits, and the total revenue of the bureaus of incumbrances as compared with the cost of operation.

	1904.		1905.	
	No.	Issued. Receipts.	No.	Issued. Receipts.
Building material permits	3,978		5,548	
Temporary shed permits	541	\$2,705	828	\$4,140
Permits to cross sidewalks	769		1,102	

Expenditures.			
	1904.		1905.
For salaries :		\$15,138.70	\$15,814.35
For removal of incumbrances, etc., and salaries of foremen and laborers		10,117.75	14,647.41
		<hr/>	<hr/>
Total		\$25,256.45	\$30,461.76

	1904.		1905.	
From shed permits		\$2,705.00		\$4,140.00
From redemption of seized articles.....		769.00		710.00
From auction sales of unredeemed articles.....		135.00		396.32
Total		\$3,609.00		\$5,246.32

It will be observed that in each year the regular salary expenditure of the bureau exceeds the amount utilized in removing obstructions, incumbrances, etc., which also includes the salaries of foremen and laborers, horse and wagon hire for superintendent, transportation expenses of inspectors, and telephone service.

The operations of the bureau, in addition to the issuing of permits, may be summarized as follows:

Nature of Service	Number	1904.		Number	1905.	
		Cost of re-moval.	Average cost of re-moval per load.		Cost of re-moval.	Average cost of re-moval per load.
Complaints of obstructions receiving attention	2,714			3,078		
Seizures and removals of obstructions	695	\$2,305.25	\$3.315	638	\$2,242.50	\$3.514
Loads of dirt, stone and rubbish removed.....	687	2,101.85	3.059	1,283	3,985.70	3.106
Fallen trees, stumps and posts removed.....	195	682.50	3.50	163	570.50	3.50
Notices served to repair defective vault covers.	25			40		



Thirty-second Street and Pennsylvania Elevated.



Showing steel structure across N. Y. Central tracks.

THE INCUMBRANCE PRINCIPLE STRETCHED TO A DANGEROUS DEGREE.

An interesting and dangerous extension of the power of the borough president to grant permits to encumber the public highways in connection with building operations is found in the case of the 'temporary' tramway constructed and now in use, in connection with the building of the Pennsylvania and Long Island Railroad Company's terminal and tunnel. This terminal and its connections are built under authority granted by the Rapid Transit Railroad Commissioners and the Board of Aldermen. The terminal is to be located between Seventh and Ninth Avenues and 31st and 33rd Streets, 32nd Street being closed between these two avenues by reason of its occupation by the railway terminal. The construction of the terminal involves the removal of a vast quantity of stone from the excavation. To facilitate this removal to the river, where it is loaded on to barges, the borough president granted the railway permission to construct an 'elevated tramway' in 32nd Street, from 9th Avenue to the North River, under a permit issued by the principal assistant engineer dated July 29, 1904. This tramway, except where it traverses the New York Central Railway tracks, is built of wood beams. The span across the tracks is carefully built of steel.

The contractors for the terminal convey train loads of earth and stone, usually large boulders, over this tramway, loaded on unstable dumping cars. The tramway crosses 10th, 11th and 12th Avenues. At these points of intersection the roadways have been permitted to fall into wretched condition. As a result traffic is not only in danger from the passing of carelessly loaded cars overhead, but is impeded by a roadway filled with ruts and holes beneath, a condition for which the presence of the tramway is largely responsible.

The tramway occupies the center of 32nd Street, and is not only a great nuisance to the inhabitants of the street, but practically closes it to traffic. This incumbrance is tantamount to a franchise to construct and operate an elevated railway along a public thoroughfare for a length of time limited only by the convenience and necessity of the grantee, and without direct compensation to the public.

THE 'ABANDONED' CAR TRACK INCUMBRANCES.

In Manhattan 'abandoned' street railway tracks are conspicuous and detrimental incumbrances of the public highways. In 1903, the Merchants Association stated that these tracks

totalled nearly 20 miles. This length has scarcely been decreased in the three years since the publication of that statement. The recent refusal of a supreme court justice to permanently enjoin the borough president from tearing up the tracks in Vesey Street over which the company made no pretense of running cars, resulted in their removal by the bureau of highways. To what extent Mr. Ahearn will proceed in this commendable work is a matter of conjecture. In many cases the companies do not possess even the color of right which they advance with respect to continuous lines of tracks no longer used, but representing, as tangible evidence, the investment of the capital of their bondholders. There are innumerable spurs and parts of switches, such as are shown in the photographs, which remain only because the borough president has failed to take action towards their removal. They are unsightly and a menace to travel, while their presence in the pavement hastens its deterioration.

The abandoned tracks are lines over which the railway companies have ceased commercially to operate cars. They are no longer profitable as routes of transportation, but represent certain franchise rights to which the companies greedily cling. In some instances the pretext of fulfilling the purposes of the franchise is made by the perfunctory operation of one or two cars a day. So flagrant is this practice of the companies, which are under such deep obligation to the people, that it is inconceivable that the public tolerates so gross an infringement of its rights. The loss of the good-will of the public, which the companies must sustain by their anti-social practice of incumbering the streets with dead tracks, will many times outweigh any picayunish advantage which might follow from their miserly conduct.

A most flagrant example of the refusal of the railway companies to remove unneeded tracks or to live up to the obligations which the presence of these tracks in the highways entail, is the Amsterdam Avenue case. Here the tracks are for horse car use only and are paralleled with a double track electric line. The horse car tracks were laid before the electric car tracks and are on a higher grade. The consequence of this difference of grade between the two sets of track is to make one of the most important avenues in Manhattan a trough for most of its length.

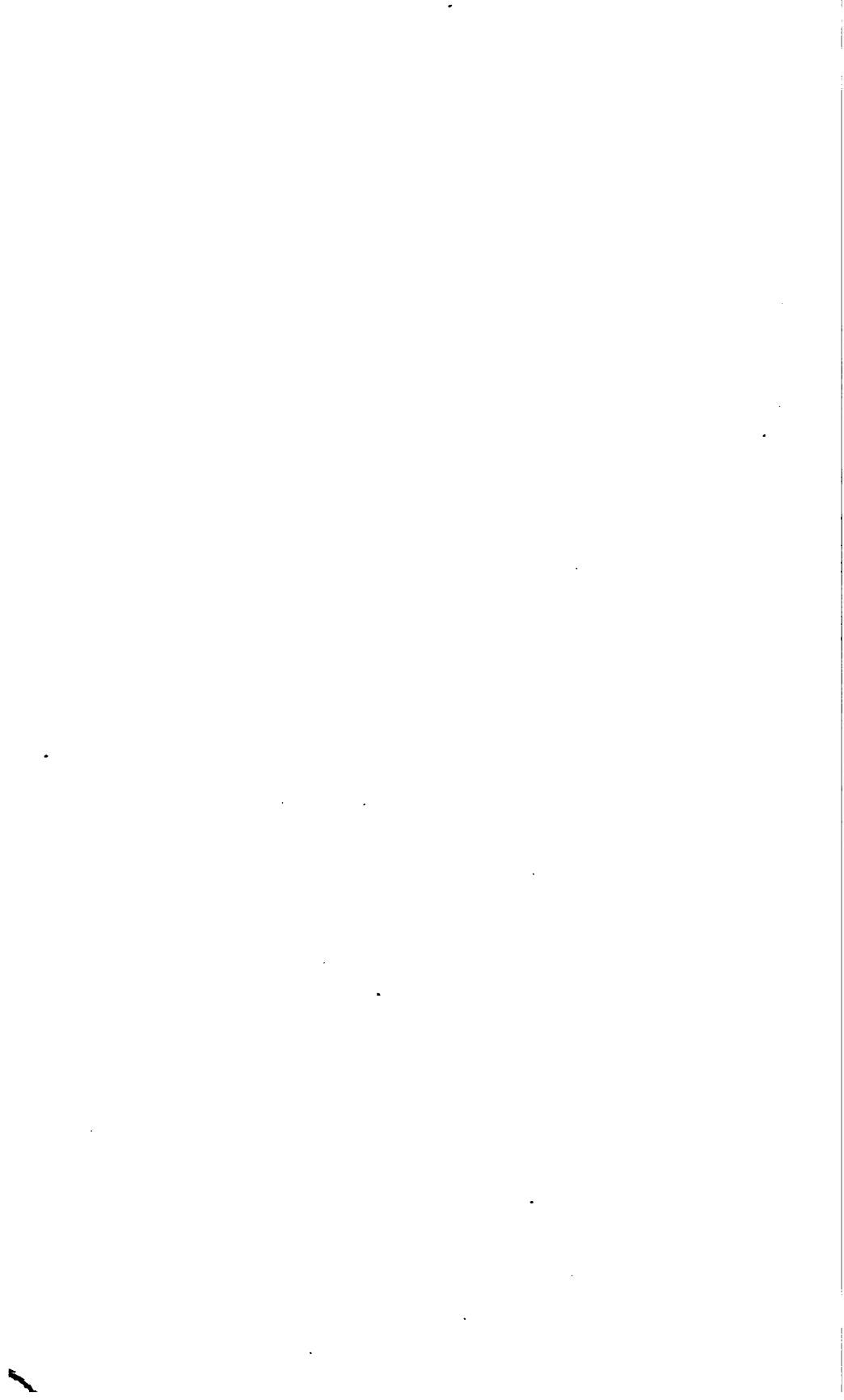
From the present status of the controversy between the city and the company over these tracks it would seem that nothing stands in the way of their removal by the city but insufficiency of back bone in the borough president's office.

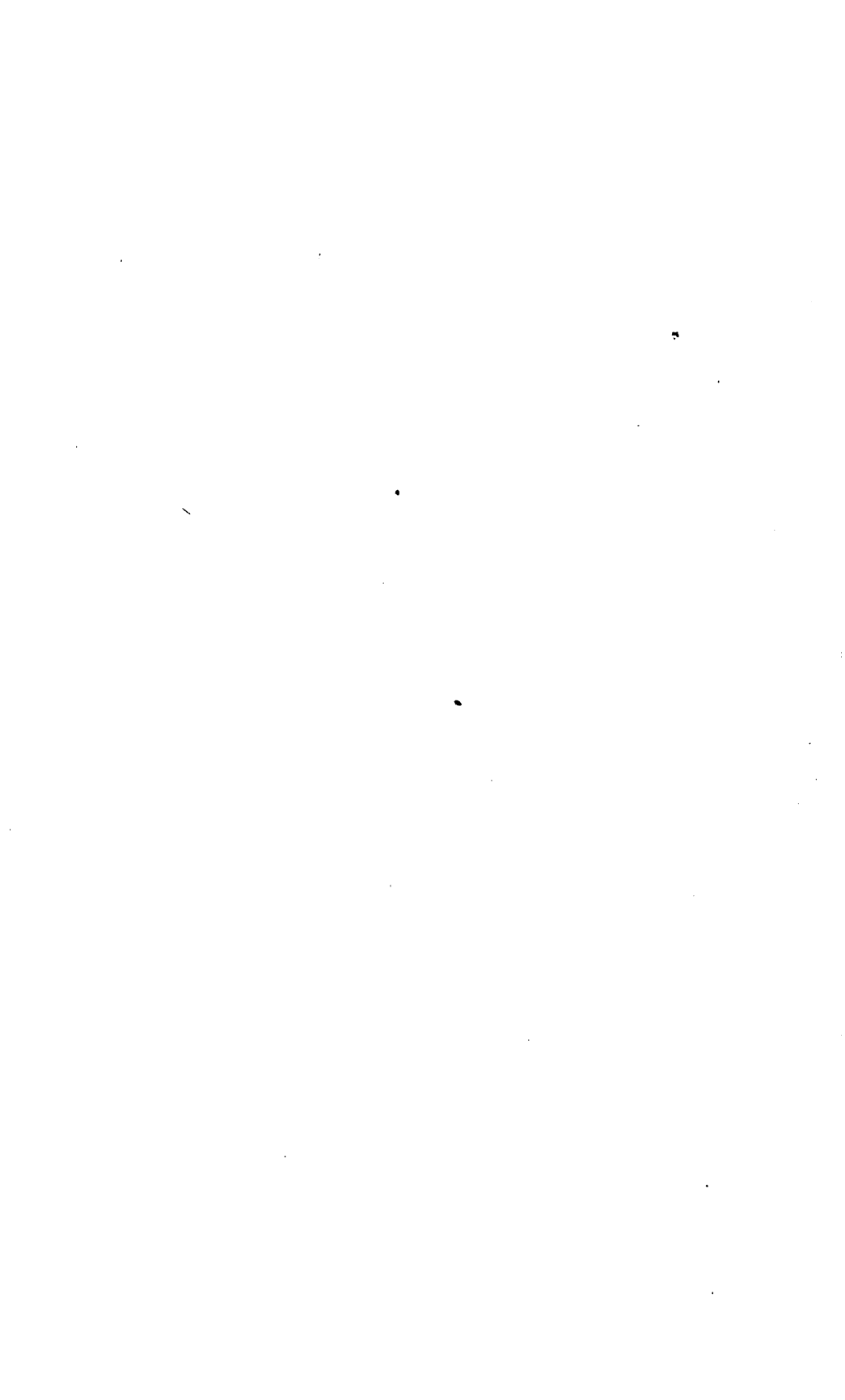


Showing condition of roadway under 'L' structure.



Abandoned car track; 34th Street and Broadway, showing faintly through asphalt pavement.







Abandoned car tracks, showing spurs and switches disconnected from main line.



Abandoned car tracks, 125th Street and Third Avenue.

Because this case is typical of the complexities of the controversy over 'dead' tracks, and because its history sets forth the public spirited attitude of the railway companies, an account of it will be of interest.

HISTORY OF THE AMSTERDAM AVENUE TRACK FIGHT.

On June 10, 1902, Jacob A. Cantor, as President of the Borough of Manhattan, ordered the Forty-Second Street, Manhattanville and St. Nicholas Avenue Railroad to remove the unused or outside horse car tracks on Amsterdam Avenue, between Broadway and Manhattan Street, and on Manhattan Street, between Amsterdam Avenue and the Hudson River. The company was told that if the work of removal was not commenced within thirty days, it would be undertaken by the borough president's department and the cost thereof charged to the railroad. This action on the part of the borough president was due to the fact that he had received a great many complaints with reference to the tracks.*

The railroad company immediately sought an injunction to restrain the borough president from carrying out his threat, and the case came to trial at Special Term before Justice Edward B. Amend, on July 17, 1902. Counsel for the railroad asserted that the borough president had no legal authority to remove the tracks or interfere with them; that they were in daily operation; and that the rights, privileges and franchises over the streets had been mortgaged to secure issues of bonds. It was further alleged that the removal of the tracks would impair the security of the bondholders and diminish and impair the franchise granted to the railroad by the Legislature.

The answer of the borough president, as defendant, alleged that the tracks had been abandoned by the railroad; that they subserved no public good; were a constant menace to the travelling public, a useless and dangerous obstruction to the street; an unnecessary interference with the traffic thereon, and a public nuisance; also, that the defendant, in discharge of his duties, was required to remove the tracks as obstructions and a nuisance.

There was little dispute as to the material points of the evidence. It appears that the Forty-second Street, Manhattanville and St. Nicholas Avenue Railroad was incorporated on December 20, 1877, and succeeded to a franchise granted by chapter 825 of the laws of 1873, which gave to certain individuals the right to construct and operate a railroad in

*The West End Association and the Independence League Club were largely responsible for the borough president's activity in this matter.

specified streets, including Tenth, now Amsterdam Avenue. For several years after its incorporation the company did nothing but make an attempt to change its route from Amsterdam Avenue to the Boulevard. A resolution of the Board of Aldermen dated December 27, 1878, permitted the change in route and the railroad constructed tracks on the Boulevard under this resolution in 1886 and 1887.

As regards Amsterdam Avenue, nothing was done until 1891, when tracks for a horse railroad were laid. Prior to the laying of the tracks of the Forty-second Street Company, the Ninth Avenue Railroad Company had laid tracks in the middle of the avenue. The latter corporation endeavored to restrain its rival from laying tracks, but without success.

One of the questions raised by the city was that the railroad had abandoned its tracks. The president of the railroad testified that in 1898 and up to the fall of 1899 thirty-five cars a day were run, when the construction of an underground trolley was begun. The number was then reduced to twenty, and these were run until a receiver was appointed for the company in 1900. The receiver ran one car a day over the road, and the railroad, after it received possession of lines in 1901, continued to run the one car until the beginning of the action. The receipts on the car were about eighty cents a day. In times of snowfall the car often suspended service from two to five days, in succession, and during these periods the snow and ice were not removed from the tracks.

Evidence was also introduced by the city to show that the tracks were under the level of the street and that the pavement was off-grade, as well as being in bad condition within and outside the tracks.

After withholding his decision for a long time, Justice Amend granted the relief sought by the railroad as to its tracks on Manhattan Street, but denied it and dismissed the complaint on the merits as to the tracks on Amsterdam Avenue. The justice held that the railroad had practically abandoned its tracks on Amsterdam Avenue, and was not entitled to the protection of a court of equity so far as that part of the road was concerned.

The railroad appealed from the judgment as it affected Amsterdam Avenue, but the city did not seek to set aside the injunction restraining its representative from tearing up the tracks on Manhattan Street.



Showing the 'trough' in Amsterdam Avenue.



Abandoned car tracks; Broadway, south from 130th St.

DECISION OF THE APPELLATE DIVISION.

In April of 1905, after voluminous briefs had been submitted by both sides, the Appellate Division reversed Justice Amend's decision and remanded the cause to Special Term for a new trial, in order that the whole case might be presented upon proper and sufficient findings of fact and conclusions of law.

The Appellate Division confined its opinion to a consideration only of the findings of the lower court, that the railroad had abandoned the operation of its railroad on Amsterdam Avenue. The decision reads in part:

"The finding of the learned trial justice is that the plaintiff practically abandoned its tracks on Amsterdam Avenue. There is no expressed finding of actual abandonment, but we will assume that it was the intention of the court to find that there was an actual abandonment of the tracks. . . .

"It appears in the record that the plaintiff undertook at one time to change its motive power to a sub-electric trolley system. It was interrupted in so doing by the provisions of chapter 371 of the laws of 1899, which provided that it shall not be lawful to operate on Amsterdam Avenue . . . any street surface railroad . . . unless tracks or rails . . . shall be at all points at least twenty feet distant from the nearest curb line of said avenue. The plaintiff could not complete its intended change of motive power . . . and it ran one car a day over the Amsterdam Avenue route, thus indicating that it was not its intention to abandon the use of its tracks.

"That act is indicative of its purpose of maintaining its right. It was not to acquire a right. It was not a pretext to evade conditions upon which a franchise was granted, but to show that it intended to retain a right which it already possessed. It is said, however, that the plaintiff was required by law to run its cars upon Amsterdam Avenue as often as the public convenience demanded, but there is nothing in this record to indicate that the public convenience was in any way affected by the action of the plaintiff. . . . The Ninth Avenue system of electric cars is operated on Amsterdam Avenue, and there is nothing to show that during the period in which the plaintiff ran but one car a day on that avenue, all the demands of the public were not fully met by the service afforded by the Ninth Avenue road.

"We think that the proof was inadequate to show an abandonment by the plaintiff of its tracks. The effect of denying it relief is to deprive it of the benefit of its franchise; and very much stronger evidence should be required to effect that object than that which now appears before us"

Whatever right the city may have to abate a nuisance, must be left for future consideration, said the justices, because the matter was not passed upon by the court below. For the same

reason they did not consider it necessary to pass upon the subject of the actual condition of the tracks on Amsterdam Avenue as constituting a nuisance, which the railroad might be compelled to remove, or in default of so doing, the city might remove under power conferred by law.

The city introduced evidence to show that the railroad neglected to repair the Amsterdam Avenue tracks and make them conform to the established grade, and that a nuisance was thereby created which the city had a right to remove. The court did not question such right in a proper case, but in this action there was a controverted question with respect to the establishment of the grade. Moreover, the court held that the action of the borough president was not taken upon the theory of the existence of the nuisance, and that no demand was made upon the plaintiff to repair the street, or restore it to grade.

It will be seen that matters are in statu quo. The case has not come to trial a second time; the city is not restrained from tearing up the tracks; and it might easily do so without incurring any legal liability.

THE PAVEMENT IN THE RAILROAD AREA.

Section 98 of the General Railroad Law provides that the street railway companies pave and keep in repair the pavement between their tracks, the rails of their tracks and two feet in width outside their tracks (the railroad area), under the supervision of the proper local authorities (the borough presidents in New York City) and whenever required by them to do so and in such manner as they prescribe. This section was originally incorporated in the Street Railway Law in 1884 and subsequently enacted as a section of the General Railroad Law.

Many of the street railways with tracks in Manhattan streets received their franchises prior to the passage of this provision. The courts have not yet decided the question as to whether the law is retroactive, and, therefore, applicable to these companies. It is a fact, however, that the franchises of most of the companies under whose authority street railways are operated in Manhattan, contained provisions binding the railways to pave and keep in repair the portion of the streets occupied by their tracks. A few of the companies are expressly freed from this obligation by the terms of their franchises. The facts respecting the provision regarding the paving obligation of the various companies, and a full and complete discussion of the question relating to the pavement in the railway area, are contained in a pamphlet recently published by the Bureau of City Betterment.*

*"The City of New York, The Street Railroad Companies and a Million and a Half Dollars."



The archaic type of rail shown in the photograph is the T rail used in horse car lines. These rails still abound in Manhattan streets; their presence in the pavement hastens its deterioration. An effort was made to minimize the injury caused by this rail in this instance by flanking it with 'tooth stones.'



The same street farther north showing the improved grooved rail used on electric lines. This rail is very much less injurious to the pavements.

When the borough president decides to repave a street in which car tracks are laid he gives notice to the railway company and requests a statement of its preference respecting the kind of pavement to be laid in the railroad area. The company usually replies that the pavement already laid is satisfactory and requires no change. If a preference is indicated it is usually for stone block pavement, because this pavement is the most durable, can be kept in repair by the employes of the company, and permits access to the sub-surface parts of the tracks without involving the disruption of a pavement costly to replace. Proof of the preference for stone block pavement on the part of the railway companies requires only the most casual inspection of the area throughout the borough. An investigation made by the Bureau of City Betterment revealed the fact that in 70 per cent of the city blocks through which railway lines run, the railroad area is paved with stone block. It is obvious that the convenience of the companies has been permitted to outweigh the comfort of the public, in this matter of the pavement of the railroad area. The clatter of vehicles crossing the stone paved railway area in an asphalted street, offsets completely the comfort usually derived from a noiseless pavement.

Whenever a pavement is renewed in a street containing tracks the railway companies find some pretext for evading their obligation to pay their share of the cost. Suits for some \$720,000 are now pending, for bills rendered by the city to the companies for pavement laid in the railway area and paid for by the public. Because of the present supineness of the city in its failure to press the claims, the companies apparently feel secure in their refusal to accept the obligation placed upon them by the Railroad Law, and in many cases, by explicit conditions of their franchises. The list of outstanding bills for payment owing to the city by the various railway companies is illuminative of the attitude taken by these favored corporations to the public, their constant benefactors. It will be seen that some of this indebtedness dates back to 1889.

**Net Indebtedness Of The Different Railroad Companies To The
City Of New York, For Repaving Within, Between And Two
Feet Outside Of The Tracks From 1899, When The
First Bills Were Rendered, To June 4, 1906:**

Eighth Avenue Railroad Company	\$39,161.04
Twenty-eighth and Twenty-ninth Street Railroad Co.....	23,718.95
New York and Harlem Railroad Co.....	190,804.17
Forty-second Street, Manhattanville and St. Nicholas Avenue Railroad Co.	105,777.85
Ninth Avenue Railroad Co.	34,386.69
Second Avenue Railroad Co.	87,683.12
Bleecker Street and Fulton Ferry R. R. Co.....	47,394.72
Broadway and Seventh Avenue Railroad Co.....	162,445.25
Metropolitan Crosstown Railroad Co.....	25,804.37
North and East River Railroad Co.	5,362.60
Avenue C Railroad Co.	28,921.38
New York Central and Hudson River Railroad Co.....	2,627.26
Union Railway Co.	19,706.92
Thirty-fourth Street Crosstown Railroad Co.	6,300.50
Twenty-third Street Railroad Co.....	19,730.95
Forty-second Street and Grand Street Ferry Railroad Co....	61,997.14
Sixth Avenue Railroad Co.....	59,478.72
Christopher and West Tenth Streets Railroad Co.....	36,867.71
Metropolitan Street Railway Co.	221,713.35
Central Crosstown Railroad Co.	14,548.46
Third Avenue Railroad Co.	15,985.84
Central Park and North and East River Railroad Co.....	64,648.52
Chambers Street and Grand Street Ferry Railroad Co.....	17,770.38
Dry Dock and East Broadway and Battery Railroad Co.....	111,135.42
Houston, West Street and Pavonia Ferry Railroad Co.....	36,282.73
Broadway Railroad Co.	8,297.40
Lexington Avenue Railroad Co.	5,398.10
One Hundred and Sixteenth Street Railroad Co.	4,462.60
One Hundred and Sixteenth Street and Lenox Avenue R. R. Co.	6,532.22
Fourth Avenue Railroad Co.	2,314.19
One Hundred and Twenty-fifth Street Crosstown Railroad Co.	1,575.39
Sixth and Eighth Avenue Railroad Co.	94.39
Tenth Avenue Railroad Co.	199.41
Fulton Street Crosstown Railroad Co.	626.38
Avenue A Railroad Co.	1,314.06
Seventh Avenue Railroad Co.	42,061.01
Total	\$1,512,529.19

In order to ascertain the condition of the railroad area, a careful and laborious examination was made by the Bureau of City Betterment, in June, 1906, of the pavement between the rails and tracks of all the lines in Manhattan. The results of this examination, detailed below, were instructive.

A total of 36 lines were covered, including 2,252 city blocks and 500 crossings or intersections of lines. Of the total num-

ber of blocks, 1,576, or about 70 per cent, were found to be paved with stone pavement. Thirteen per cent of the blocks were found to be in good condition, i. e., entirely free from ruts, holes and depressions; 32 per cent were found in fair condition, i. e., a group including blocks where depressions were infrequent and ruts and holes not serious enough to render travel difficult; and 55 per cent in bad condition, a state indicating neglect of the pavement, where holes, ruts and depressions predominated. On a conservative basis, therefore, the investigation revealed the fact that the pavement in the railway area in more than one-half of the blocks in which tracks are laid is not kept in repair by the street railway companies, contrary to their explicit obligations.

It is obvious that the city is in no position to longer temporize with the defaulting companies. Immediate and vigorous action by the Corporation Counsel must be begun in order that the city may determine by judicial process whether it is without relief from the continued refusal of the companies to discharge their obligations.

Condition Of Railroad Area.

Inspected June, 1906.

Route of Railroad Line.	No. of Blocks.			No. of Crossings.		
	Good	Fair	Bad	Good	Fair	Bad
Spring St.—Desbrosses to Grand St. Ferry...	10	34		2	23	
Chambers St. Ferry to Roosevelt Street Ferry		8			2	
Duane, Chambers and Madison St. Line...	8	6	28		23	
Prince, Houston, Avenue A and Ave. C Line		6	74		43	
Eighth St. Line—Greenpoint Ferry to Christopher St. Ferry.....	8	15	20	5	22	
East Side Belt Line—South Ferry to 125th Street	7	46	155	3	24	
Third Avenue Line—Post Office to 130th Street	13	91	50	2	6	8
Third Avenue Line—162nd Street and Am- sterdam Avenue to 221st St. and Broad- way		42	8			1
East 110th Street Line, via St. Nicholas Ave., etc., to West 130th St. Ferry.....		11	16	2	6	
Lexington Avenue Line, from 23rd St. to 133rd Street	13	46	54		3	
Twenty-third St. Line, from North to East River		3	17	3	7	
West Side Belt Line, from South Ferry to 71st Street	12	16	83	3	1	10
Ninth Avenue Line—59th St. to Cortlandt Street	8	57	65	13	19	
Fourteenth Street—North River to Ave- nue D.	3	9	4	4	9	
Sixth and Amsterdam Avenue Line—South Ferry to Manhattan St.....	9	33	80	3	16	

Route of Railroad Line.	No. of Blocks.			No. of Crossings.		
	Good	Fair	Bad	Good	Fair	Bad
Grand Street Line—East to North River...	15	28		1	1	16
East and West 42nd Street Line.....	5	12			1	10
East 116th Street and West 106th Street Line		1	8		4	1
West 145th Street Crosstown Line.....	6		2	1		
28th and 29th Street Crosstown Line.....	7	24		1	6	13
59th Street Crosstown Line.....			12		4	6
Second Avenue Line—129th St. to Brooklyn Bridge	34	36	79	1	10	8
Fourth Avenue Line—Astor Place to 137th St.	40	52	49	4	1	10
Eighth Ave. Line—59th St. to Battery Place	27	67	114		2	26
Canal St. Line—Grand St. Ferry to North Moore and Washington Streets		3	36		2	19
Chatham Sq. & East Broadway Line to E. 34th Street Ferry	8		33			10
West 86th Street Line—Amsterdam Ave. to Riverside Drive		2	1			1
East and West 125th St. Crosstown Line..	9	10			7	2
Broadway, Columbus Ave. & Lenox Ave. Line—South Ferry to 148th Street.....	22	104	61	1	3	18
Amsterdam Ave. Branch of Third Avenue Line	66					
Seventh Avenue Line.....		14	26		3	9
Desbrosses Street Ferry to 3rd Street and 6th Ave.....		4	8			4
17th and 18th St. Crosstown.....	1	3	15			12
Fulton Street Crosstown.....		1	11-	1		4
East and West 34th Street.....		5	9		3	7
Eighty-sixth St. Line.....		7	7		3	1
Total	304	717	1,231	15	92	393
	13%	32%	55%	3%	18%	79%

Total number of blocks.....2,752
Total number of crossings..... 500

Of the total number of blocks of the railroad area 1,576, or about 70 per cent, are paved with stone, while 178 blocks, or about 7 per cent, are paved with a combination of stone and asphalt or other material, the remainder, 23 per cent, being paved exclusively with material other than stone block.

After the investigation of the railroad area was completed, detailed reports were submitted by the Bureau of City Betterment to the chief engineer of the bureau of highways, with the suggestion that orders be issued to the railroad companies to repair immediately all blocks found to be in bad condition.

The reports were examined by the chief engineer's assistants and found to be of great value as the bureau of highways was without a comprehensive record of this description. There-

upon, a number of orders to repair defective pavements in various parts of the borough were issued to the railroad companies, and as a result, applications for permission to take up and relay pavements in the railroad area are being received day by day at the bureau of highways.

Summary Of Corporations Liable For Repairs And Repaving.

By Resolution of the Common Council.

Name of Railroad.	Number of Miles.
New York and Harlem Railroad (City Line).....	9.878
Second Avenue Railroad	13.693
Third Avenue Railroad	13.190
Sixth Avenue Railroad	5.585
Eighth Avenue Railroad	9.445
Mileage owned jointly by Sixth and Eighth Avenue Railroads	1.16
Broadway Railroad	2.463
Bleecker Street and Fulton Ferry Railroad.....	4.741
Ninth Avenue Railroad	8.658
Forty-second Street, Manhattanville and St. Nicholas Avenue Railroad	12.247
Broadway and Seventh Avenue Railroad	8.270
New York Central and Hudson River Railroad (Mileage in Manhattan not given in report of Railroad Commissioners.)	

By Special Act of Legislature.

Christopher and Tenth Street Railroad.....	1.999
Harlem Bridge, Morrisania and Fordham Railroad (Mileage included in Union Railway Co.)	
By chapter 252 of the laws of 1884 or chapter 565 of the laws of 1890.	
Columbus and Ninth Avenue Railroad	2.567
Chambers and Grand Street Ferry Railroad.....	2.357
Thirty-fourth Street Railroad .....	.476
North and East River Railroad .....	.394
Twenty-eighth and Twenty-ninth Street Railroad.....	2.836
Extensions of Houston Street, West Street and Pavonia Ferry Railroad authorized in 1892.....	4.831
Lexington Avenue and Pavonia Ferry Railroad.....	6.164
Metropolitan Crosstown Railroad	3.897
Metropolitan Street Railway Company.....	23.861
Corporations not made liable for repairs and repaving by their franchises:	
Central Park and North and East River Railroad.....	9.559
Dry Dock, East Broadway and Battery Railroad.....	8.504
Forty-second Street and Grand Street Ferry Railroad....	3.564
Central Crosstown Railroad	1.810
Twenty-third Street Railroad	1.930
One Hundred and Twenty-fifth Street Railroad (Mileage included in Third Avenue System.)	
Union Railway Company (Required to make repairs by its franchise, but not required to repave). (Principally in The Bronx).....	40.267

It will have been noted that twenty-two railroads are obliged to repair and repave the area occupied by their tracks, either by reason of resolution of the Common Council, special act of the Legislature, or chapter 252 of the laws of 1884, or chapter 565 of the laws of 1890. Six railroads are exempted from obligation to pave and repair by the terms of their franchises, while one, the Union Railway Company, whose lines lie chiefly in the Borough of The Bronx, is partially exempted. The Court of Appeals has yet to decide whether chapter 555 of the laws of 1890 (Railroad Law), which contains the paving clause originally enacted in chapter 252 of the laws of 1884, is retroactive; in other words, whether it covers the cases of companies which were organized prior to its passage and whose franchises contain no paving clause.

STREET SIGNS.

Manhattan has not yet succeeded in indicating the names of streets to pedestrians and drivers in a scientific and uniform manner. Throughout most of the island one has to scan gas lamps, house walls and electric light poles to find his location. President Ahearn has followed the example set by his predecessors in making experiments in signing the streets. The result is that in the Borough of Manhattan there are eight or more types of signs in use, suspended from almost as many unexpected places.

The Borough of Manhattan has been frequently held up to ridicule as a place of bewilderment for strangers by reason of the absence of street signs. The vigorous protests of citizens and the insistence of certain powerful commercial interests, represented by the telegraph and express companies and the department stores, whose delivery service is greatly embarrassed by the absence of street signs, have resulted in some recent activity in the placing of signs.

The first essential in street signs is legibility, both by day and by night. They should also be attractive in form, and be built of durable material.

It is extremely doubtful whether all the foregoing requirements are filled by any one of the different types of signs now to be found in Manhattan. The earliest of the modern signs were placed during the administration of President Cantor in 1903. There were five varieties. The first was the blue enamel



A cheap sign set on 'dead' gas lamp posts.



Street sign. No. 1.



The criss-cross sign erected by President Ahearn. No. 3.

plate attached to buildings. Each plate cost 98 cents, with a maintenance guarantee of three years by the contractor. Many of these signs are now missing from the walls to which they were originally attached, while a number of those that remain bear evidence of deterioration.

Another type of sign erected by President Cantor is known as the 'bird cage'—a triangular box costing \$16.98, with a maintenance guarantee of one year. The most remarkable feature of this sign, when erected, was the fact that it was attached to 'dead' or unused lamp posts. Of course it was then necessary to furnish an illuminant for the boxes at night, and the gas companies were called upon to do this. The Consolidated Gas Company charged \$17.50 per year per lamp; the Standard Gas Light Company, \$13.04 1-3, and the New Amsterdam Company, \$12. The prices of the two latter companies were limited by their charters.

A third sign was erected by the New York Edison Company on its own poles. It cost \$12.50 and the company agreed to maintain and illuminate each sign box for one year. After that the company got \$12.50 a year for lighting each sign.

The Borough President states that there are 1,350 'bird cages' and 144 Edison signs in the borough. They are no longer illuminated, however, for the Board of Estimate and Apportionment at its meeting on March 16, 1905, requested the commissioner of water supply, gas and electricity to discontinue the service for all gas and electric lights inside of street signs, except for fire alarms. The wisdom of purchasing these two types can fairly be doubted. They were never readily legible at night, for they contained metal or enamel name plates, through which the light within could not penetrate, instead of stencils backed with glass, which would have rendered them serviceable. Their cost of operation was out of proportion to the illumination given by them, which varied from twenty to twenty-five candle power, the gas burning with an open flame; and as a whole the signs were a greater source of profit to the gas companies than a benefit to the community.

The two other types erected during President Cantor's administration were as follows:

Square boxes with glass signs backed by reflectors, attached to Welsbach lights, \$12.50 each.

Triangular boxes with glass signs backed by reflectors, erected on electric light poles, \$18 each; to be seen on Fifth and Madison Avenues.

Since President Ahearn took office these reflector signs, as they are called, have undergone alterations. The glass plates have been replaced by stencils with opal glass backing, while in some instances the reflectors have been removed from frames attached to Welsbach lights.

The signs now being placed by President Ahearn are much cheaper than the reflector signs and do not contain the weight or quality of metal to be found in the latter.

The Ahearn signs are of three types:

(1) Square cast-iron frames with zinc stencils and opal glass backing, attached to Welsbach lights; cost \$4.75 each, including erection and maintenance for three years.

(2) Square cast-iron frames with zinc stencils and opal glass backing on two sides, and blue enamel signs with solid white letters on the other two sides, attached to electric light poles; cost \$6 per sign, including erection and maintenance for three years.

(3) Criss-cross signs, composed of four rectangular cast-iron frames. In each frame there are two blue enamel plates, placed back to back, bearing the name of the street in solid white letters. The frames containing the signs for the intersecting streets are placed one above the other, at right angles, on disused gas lamp posts. They are not illuminated and cost \$6 each.

In 1905 and in 1906 up to June 29, 1,780 signs of the first type, 1,002 of the second, and 491 of the third were erected. Only a few signs were erected in 1904 to replace others that had been destroyed. The appropriation for the maintenance of signs in 1904 and 1905 amounted in each instance to \$3,000. In 1904 nothing was appropriated in bond issues for the purchase and erection of signs, but in 1905 there was a bond issue of \$30,000 on this account. This money is now being utilized. The latest contract was let on April 19, 1906, the estimated cost being \$27,367. The contractor is Joseph N. Early, who furnished 'bird cage' signs to President Cantor.



Street sign; type No. 5.



The 'bird cage' sign. For illuminating these signs the gas companies formerly received from \$12 to \$17 each per annum.



Type No. 2 of Manhattan street signs.
Erected by President Ahearn.



Another bird cage specimen.



A perverted use of the street sign.

Whether the Early signs will prove a success, so far as wearing is concerned, remains to be seen. The frames are made of cast iron and for this reason the collars by which they are attached to the posts are likely to break, especially if a post is struck heavily by wagon, which frequently happens. It is a question, too, whether the zinc stencils will not be speedily attacked by rust, and the suggestion has been made that stencils of copper, bronze, or some other material, unaffected by the weather, be substituted for the zinc plates. Another criticism directed against the Early signs relates to the type attached to electric light poles. These sign boxes have two enamel and two stencil name plates, and while the stencils are legible at night the letters on the enamel plates are indistinct. This is a serious fault and might be remedied by using four stencils instead of two. It is obvious that the case of illuminated sign stencils display the lettering to better advantage than do solid enamel plates, while the latter are more serviceable when attached to signs that are not illuminated.

VAULTS UNDER SIDEWALKS.

The city owns the streets from lot line to lot line. It owns not only the roadway from curb to curb, but the sidewalks, and not only the sidewalk itself but the earth beneath it, in the fullest legal sense.

Accordingly, the city is liable for damages for injuries to persons caused by defective sidewalks when the condition of the sidewalk can be properly attributed to the negligence of the city authorities. In other words, the city enjoys the burdens of ownership in that it is responsible for the making and keeping in repair of sidewalks, and for damages arising from its neglect in that respect.

It is known to what uses the earth beneath the surface of the roadways is put by the city. It is here that sewers and pipes are laid, either by the city itself or by some franchise holding company. Apparently, no public use has been discovered for that portion of the highway which lies under the surface of the sidewalks. This space is almost everywhere used by the abutting property owners for the construction of vaults, on the payment to the city as rental for an indefinite period, hitherto practically forever, the sum of \$2 per square foot.

The sale of the privilege of using this city property for private persons produced an income to the city of \$213,265.39 in 1904 and \$328,044.35 in 1905. The grantees put this space to divers uses, from the storage of coal to providing room for the selling of goods or restaurant purposes. In this way for a trifling sum land owners can add generously to the space of their basements, and for its use by others derive a handsome profit over what they themselves pay the city. The city receives only one payment ; the landholder's revenue continues indefinitely.

Some of the contracts between the selling value of land and the receipts of the city for vault space adjoining are strikingly set forth in the case of two buildings now in course of construction.

No. 1 Wall Street, at the corner of Wall Street and Broadway, the most valuable plot of building land in America, recently sold for \$750,000. Its dimensions are, roughly, the lot being irregular, 39 feet by 31 feet. The plot contains 1,225 square feet. For each square foot \$612.24 was paid. The city has granted to the owners of this plot 940.80 square feet of the land under the sidewalks of the abutting streets, at a rental of \$2 for an indefinite period, or a total return to the city of \$1,881.60. The vault is to be dugged down 28 feet 6 inches below the surface of the street, or three stories. The building itself is to be 217 feet high above the curb, or 18 stories, each story being 12 feet in height.

Another interesting example of the petty returns received by the city for the use of its property for vault space, is found in the case of a building now nearing completion at 118-120 Fifth Avenue. Here the entire lot measures only 5,830 square feet, while the vault space received from the city measures 3,608.77 square feet. From the photographs of this vault space it will readily be seen that it can be used for nearly any purpose. Spacious, and well-lighted by means of glass set into the sidewalk, it will be form a valuable adjunct to the building. For its use the owners of the building will require their tenants to pay handsomely. For this vault space the city received, at the rate of \$2 per square foot, \$7,214.54. The average price of the land upon which the building is erected was, at a sale in January, 1905, \$53.17 per square foot. Its assessed value in 1906 was \$53.69 per square foot.

That these grants to vault space are revocable at will means little. Only in the most exceptional cases, as, for instance, the building of a subway, does the city attempt to regain pos-





No. 1 Wall Street. The value of this lot is \$750,000.



Vault space. The concrete outer wall of the vault is shown under the curb line. The damage to the pavement was caused by the excavation for the vault.

session. Even in these cases there is likely to be opposition, as was recently shown by the objection of a number of bankers and merchants to a proposed subway route on the ground that it would interfere with *their* vault space! It apparently becomes very difficult for property owners to remember that the land which they have immemorially occupied does not belong to them—that they have no right with respect to it at all, but that it is the property of the public.

It is not improbable that the city will find these spaces under the sidewalks valuable in working out the problem of pipe galleries. They are now being used at several points, in connection with the attempt to ventilate the underground rapid transit railway.

Whether or not there may be a use to which the city could put this public land under the sidewalks, it is clear that it should derive a revenue from its occupation and use by private persons in some way commensurate with the privilege enjoyed. How this can be equitably done has already been illustrated in Chicago.

The Vaults Under Sidewalks in Chicago.

In Chicago the authorities have awakened to the rights of the public in these vault spaces. There, a permit to use the land under the sidewalk is revocable but also conditioned on the payment of a rental in proportion to the assessed value of the abutting property, the terms of the lease to be readjusted annually on the basis of the assessed valuation.

The terms of the vault permits issued in Chicago are, briefly, as follows:

1. No permit may be transferred or assigned without the written consent of the commissioner of public works.

2. A bond of \$10,000 is required from the lessee conditioned on the lessees saving the city harmless for any damage arising from the use of the vault space, or the condition of the sidewalk above it.

3. Rental—When the vault extends not more than 15 feet below the surface of the street, the *annual* rental shall be a sum equal to four per cent (4%) of the amount determined by multiplying the number of square feet of surface over the space used by a sum equal to one-tenth* of the land value

*Because the vault space does not extend above the sidewalk it is equitable to estimate its value for building purposes as being only a fractional part of the value of the land where the property 'reaches the sky'.

of the average square foot in the lot abutting on such space as fixed by the last assessment for general taxation (and by other prescribed methods for determining the value when the land is not subject to general taxation).

4. Whenever any of the vault space extends to a point more than 15 feet below the surface of the street, there is paid to the city, as the annual compensation for the use of every additional 12 feet, or fractional part thereof, in depth, an additional sum equal to one-half the rental of the first fifteen feet.

5. In no case may the annual rental be less than \$10 per annum, no matter how small the space used may be.

6. The permit is revocable at any time for violation of its conditions.

7. Violations of the conditions of the ordinance governing the granting of the permits to use sub-sidewalk vaults, are punishable by fines of not less than five nor more than twenty-five (\$25) dollars.

8. The granting of a privilege to occupy space under the sidewalk does not preclude the city from resuming its full rights to the space if it is needed for public purposes.

9. The vaults have to be constructed according to a method prescribed by ordinance.

It will have been seen that in Chicago users of space under sidewalks have to pay an *annual* rent conditioned upon the assessed valuation of the abutting property; that this rent increases with the depth of the vault over fifteen feet; that the city is protected by bond from any damage which may be claimed from it by reason of accident caused by the condition of the sidewalk above the vault, the presence therein of manholes leading to the vault, coal openings, etc.; and that the use of vaults for private purposes can be terminated whenever the space is required by the public.

It is interesting to apply the Chicago method to the case of No. 1 Wall Street. The present assessed valuation of that property is \$610,000 or \$497.96 per square foot. One-tenth this amount is \$49.796. This sum multiplied by the total number of square feet, or 1,225, amounts to \$61,000.10. Four per cent of this sum is \$2,440. This would be the annual rent, for this year,



The vault space at Nos. 118-120 Fifth Avenue.



The 'roof' of the vault space at Nos. 118-120 Fifth Avenue.



A sidewalk in West 54th Street.



The original stone pavement on Broadway: Russ blocks.

of the first 15 feet in depth of the vault space at No. 1 Wall Street, which is now turned over to the owners of that property for an indefinite period for \$1,881.60. But this \$2,440 would not be the total rent. The vault is 28 feet deep. For each 12 feet or fraction of 12 feet in addition to the first 15 feet, the Chicago system requires the user to pay one-half as much again as he pays for the first 15 feet. In the case of No. 1 Wall Street, therefore, the rent would be double the amount of the rent paid for the first 15 feet, or \$4,880. As the value of this property increases, so would this rental, payable annually, increase.

Whether President Ahearn is conscious of the great loss to the city which results from the archaic and unscientific method of leasing vault spaces in his borough is not known. It is clear, however, that it is incumbent upon him, as the conservator of the interests of his borough and the official in whom the power to grant vault permits is vested, and as a member of the Board of Aldermen, to determine some method of securing for the city an adequate return for the use of its property under the sidewalks.

SIDEWALKS.

In many parts of Manhattan the sidewalks are in a defective and obviously dangerous condition. This statement is particularly true of the bluestone flagging, which chips and cracks readily and is unfit for walks carrying a heavy and constant stream of traffic.

Pending in the courts against the city on December 31, 1905, were eighty-two suits for personal injuries due to alleged defects in the sidewalks of Manhattan. The sum, \$634,600, was involved in the suits, which speak eloquently of the necessity for thoroughly overhauling the sidewalks in the borough.

Property owners pay for the sidewalk in front of their respective buildings, but the city has to bear the brunt of such lawsuits as are indicated above, for the reason that all borough presidents are required to see that property owners keep their sidewalks in good repair.

When a complaint concerning a defective sidewalk reaches the Bureau of Highways, through one of its inspectors or from a citizen, a notice to repair is sent to the agent or owner of the premises. Some property owners comply with the terms of their notices, while others do not. In the case of the latter the matter is referred to the local board of the district in which

the premises are located. If the consent of the local board is given, the repair work is done by the borough president and the cost thereof assessed on the property. The following table shows the number of notices served during the last four years and the number of permits issued :

Year.	Notices Issued.	Permits Issued.
1902	1,880	1,712
1903	2,918	2,341
1904	4,541	2,602
1905	4,785	3,241

The permits issued, it may be explained, represent the cases in which the property owners complied with the request to repair, while the difference between the number of notices served and the number of permits issued represent the cases referred to the local boards for action. No record is kept in the bureau of highways of the square feet of sidewalk repaired by property owners, but inspections are made for the purpose of learning whether the orders to repair have been carried out. A record is kept of the repairs made under the supervision of the borough president, and assessment lists are prepared from time to time.

Speaking generally, the sidewalks of Manhattan are not a credit to the borough. In front of most of the modern buildings heavy granite or concrete walks have been placed, and these are a decided improvement. The antiquated bluestone flagging, however, still forms a major portion of the borough's pathways, and until this material is superseded, or some organized system of repairs instituted, the sidewalks can never be placed in good condition.

A smooth and clear pathway for pedestrians is almost an impossibility in this borough, for the reason that all sidewalks are studded with iron manhole covers and gratings, through which access to the vaults below is gained. Sometimes as many as nine manholes and gratings are to be found in front of one building. A manhole is really an obstruction, for it usually rises slightly above the level of the flagstone. Moreover, in winter, it is frequently a slippery and dangerous object. The gratings, too, are a nuisance. In some instances they are virtually flues for the passage of hot vapour from boiler rooms, while in others they form outlets for elevators used for hoisting ashes and other waste to the sidewalk. In either case they restrict the pathway. Few pedestrians care to walk over hot flues, and when the gratings are open for elevator service the hole thus made in the sidewalk is something to be avoided. Similarly, the well-established practice of removing manhole covers at all hours of the day or night for the purpose of dumping coal into vaults and cellars, is also a source of annoyance and danger to pedestrians.



An example of curb stones found in various places in Manhattan; caused by the wheels of heavy traffic.



Condition of sidewalk and pavement after the making of a cut by a corporation.

EXPENDITURES OF THE BOROUGH PRESIDENT WITHOUT CONTRACT.

The borough president, like the heads of other city departments, has the right to purchase supplies and to carry out public improvements without public contract, if the expenditure involved in each case does not exceed \$1,000. This privilege is a valuable one in all departments from the patronage point of view, and while bids are not infrequently invited when supplies are to be purchased in lots of \$1,000 and less, it does not necessarily follow that the lowest bidder is successful.

By utilizing his appropriation account and special trust and revenue bond fund accounts, President Ahearn, in 1904 and 1905, expended for supplies, repairs and repaving, *without public contract*, for 'incidentals', cab and buggy hire, and professional services the vast sum of \$1,021,717.50. This amount is divided as follows:

	1904.	1905.	Total for two years.
Borough Presidents' office (general administration)	\$12,474.82	\$12,536.63	\$25,011.45
Bureau of engineer of street open- ings	1,582.33	2,392.07	3,974.40
Bureau of Highways	130,416.68	222,775.32	353,192.00
Bureau of Incumbrances	7,548.44	11,396.41	18,944.85
Bureau of Sewers	23,669.59	42,799.88	66,469.47
Bureau of Public Buildings and Of- fices	212,309.72	232,656.27	444,965.99
Bureau of Buildings	74,290.62	34,868.72	109,159.34
Grand Total			<hr/> \$1,021,717.50

SUPPLIES.

Supplies for the various bureaus under the jurisdiction of the borough president are purchased by the superintendent of the bureau of public buildings and offices, which, before the charter was revised, was a separate department entrusted with the power to purchase supplies for all city departments. Several departments continue to call upon the bureau to supply them with various articles of necessity, such departments including the Board of Estimate and Apportionment, the Board of Alder-

men, the sheriff's office, the department of finance, and the various courts. The bureau of public buildings and offices, in view of its position as a sort of general purchasing agent, advocates through its superintendent a return to the old conditions, and during the last session of the Legislature a bill giving the bureau all the advantages enjoyed under the former charter was introduced but failed of passage. It will doubtless appear at future sessions.

Theoretically, much might be said in favor of a single supply bureau for all departments, as a means of effecting economies in the purchase of the multitude of articles used by the city, although the activities of the bureau of public buildings and offices during the past two years do not offer an argument for the enlargement of its powers. According to the detailed statements of all accounts audited and allowed by the department of finance, as published in supplements of the "City Record," the superintendent of public buildings and offices expended in 1904 and 1905 the total sum of \$444,965.99 for the purchase of supplies and for repair work, etc., for the borough president's department and other departments, *without public contract*. The total may be divided as follows:

	1904.	1905.
Appropriation Account	\$177,666.95	\$161,454.66
Revenue Bond Fund and Special Trust Accounts	34,642.77	71,201.61
Total	*\$212,309.72	*\$232,656.27

*These totals include \$9,947.45 expended in 1904 and \$8,088.09 in 1905, a total of \$18,015.54, for supplies purchased from the department of correction and the State prisons.

The principal items purchased without public contract and the amounts expended are herewith given:

Item.	Amount in 1904.	No. of Bills.	Amount in 1905.	No. of Bills.	Total Amount for 2 years.	Total No. of Bills.
Janitor's supplies, hardware paper, etc.	\$16,074.20	102	\$19,980.06	126	\$36,054.26	228
Furniture, carpets, rugs, etc., and re- pairing furniture..	19,521.60	98	16,465.20	100	35,986.80	198
Live steam	11,021.86	28	9,360.60	7	20,382.46	35
Disinfectant	3,696.00	46	4,424.55	61	8,120.55	107
Safes	3,374.75	14	4,516.12	12	7,890.87	26
Lumber	4,553.69	26	2,921.22	15	7,474.91	41
Soap, soap powder and bleach	1,701.26	20	3,095.20	22	4,796.46	42

Varnish, paint and brushes	2,622.98	25	1,679.16	22	4,302.14	47
Oil and boiler compound	2,731.97	30	1,361.10	25	4,093.07	55
Brick, lime, etc.....	1,310.75	7	2,713.01	17	4,023.76	24
Kindling wood	1,348.00	8	1,074.00	6	2,422.00	14
Spring water	443.55	17	1,034.60	31	1,478.15	48
Steel filing cases....	975.00	1	2,082.50	6	3,057.50	7

Of the total amount (\$36,054.26) expended in the two years for janitor's supplies, etc., \$30,312.66 was paid to the Metropolitan Equipment and Supply Company, in 167 warrants, the rest being distributed among six other firms.

Furniture, carpets, rugs, etc., were furnished by six concerns: John H. Little, \$9,548.25; James R. Keane & Co., \$6,032.74; Doherty & Co., \$5,158.15; Frederick Goll, \$4,606.55; S. Fink & Co., \$3,997.16; Thomas Bowe, \$3,907.03; W. A. Stromayer, \$445; M. Hulborn, \$354.25. The repairing of furniture was done by Thomas Sullivan, who received \$1,936.67.

Live steam was bought from the New York Steam Company, which received \$18,282.40; from Nathaniel W. Keane, whose bills amounted to \$1,300, and from the Demilt Dispensary, to which was paid the sum of \$800. The expenditure of \$8,120.55 for disinfectant is unusual, and it is difficult to understand why a regular contract could not be awarded annually for such material. Following are the concerns which furnished the disinfectant: M. Frank Disinfectant Co., \$3,733.80, fifty-one bills; Antozone Chemical Company, \$3,465.45, forty-three bills; Empire Chemical Company, \$320, three bills; Heins Chemical Company, \$247, four bills; Puritan Disinfectant Company, \$215, four bills; West Disinfecting Company, \$90.90, one bill; American Union Supply Company, \$48.40, one bill.

Safes were supplied by the Mittnacht Eagle Safe Company, which received \$4,615.87, and by the Herring-Hall-Marvin Company, whose bills amounted to \$3,275.00, while three firms furnished lumber—John Eagan, \$4,711.43; East River Mill and Lumber Company, \$2,720.11; Vossneck Lumber Company, \$43.37.

A contract might properly have been awarded for kindling wood, spring water, and soap, soap powders, etc. It should certainly not be difficult to estimate the quantity of such materials needed every year. The kindling wood was purchased from one man, Cornelius Daly, the soap and soap powder

from four different firms, the George Reichard Soap Company receiving \$4,077.66 in thirty-three bills. Various companies furnished the water, which was used by other offices besides the borough president's.

Varnish, paints, brushes, glass, etc., were purchased from five firms, John J. McKenna receiving \$1,958.76 for twenty-one bills, and Peter McKay \$1,488.83, paid in seventeen warrants. For lubricating oil the Borne Scrymser Company received \$2,251.07 in 1904 and \$360.95 in 1905, the remainder being divided among five firms. The great bulk of the brick, lime, etc., was obtained from one firm, John P. Kane & Co., which received \$1,310.75 in 1904 and \$2,571.76 in 1905, a total of \$3,882.51.

The General Fire Proofing Company furnished steel filing cases valued at \$975 in 1904 and its bills in 1905 amounted to \$1,607.50. In the latter year the Art Metal Construction Company received \$475 for steel filing cases. It is not clear from a business point of view, why a regular contract was not awarded for these articles.

REPAIR WORK.

A good deal of repair work, etc., was done under the supervision of the bureau of public buildings and offices, during the years 1904 and 1905. The principal amounts expended without public contract appear in the accompanying table:

Item.	Amount in 1904.	No. of Bills	Amount in 1905.	No. of Bills.	Total Amount for 2 years.	Total No. of Bills.
Plumbing	\$31,252.22	73	\$26,006.85	54	\$57,259.07	127
Carpenter work	20,841.11	43	20,498.26	37	41,339.37	80
Electrical work, mantles, etc.	15,125.81	56	19,360.41	66	34,556.22	122
Painting	15,639.81	38	15,176.71	39	30,816.52	77
Iron work, repairs, erecting sheds, etc	9,215.08	43	6,353.40	19	15,568.48	62
Repairs to sprinklers, roofing work	8,955.30	45	7,134.12	31	16,089.42	76
Mason Work.....	6,995.46	23	7,581.94	25	14,578.40	48
Awnings, covering pipe, etc.	5,526.17	29	6,341.60	36	11,867.67	65
Anchoring, towing, and storage of floating baths.....	4,609.25	17	5,312.77	17	9,922.02	34
Extra work on Allen St. public bath....	.....	..	3,949.60	6	3,949.60	6
Extra work on public baths.....	1,270.40	3	1,305.96	2	2,576.36	5

The foregoing figures are even more illuminative than those relating to purchase of supplies. For plumbing, Joseph W. O'Brien received \$27,635.28 in 1904 and \$25,175.11 in 1905, a total of \$52,810.39, his bills numbering 104. The remainder of the work was divided among four men, of whom Joseph F. Sweeney was the most fortunate. He received \$2,087.14 in 1904 and \$811.74 in 1905.

Surely such extensive plumbing work should call for contracts, and the same comment holds true in connection with the amounts expended for carpenter and electrical work and painting. Eight firms got a share of the amount expended for carpenter work, Michael H. Lynch (later Boyce & Lynch) receiving \$12,106.91 in 1904 and \$11,441.17 in 1905, a total of \$23,548.08. Sexton and Odell got \$5,904.88 in 1904 and \$536.91 in 1905, a total of \$6,441.79; Charles H. Peckworth \$2,162.92 in 1904 and \$3,286.95 in 1905, the total being \$5,449.87. Mr. Peckworth received \$1,865.20 alone for work done at the City Hall, this amount being paid in four warrants.

The charter permits borough presidents and heads of departments to exceed the one thousand dollar limit in purchasing supplies and making repairs when the board of aldermen gives its approval by a three-fourths vote. This provision is obviously intended to afford a means of avoiding the restrictions of the charter, respecting the expenditure of sums over one thousand dollars, in cases of emergency. Several illustrations of the use of this emergency clause will be of interest. One thousand one hundred and forty-five dollars worth of carpet was bought for the General and Special Sessions court rooms in July, 1904, and the order was given to Thomas Bowe and Co. Similarly, a \$1,465 job was given to John L. Cotter for carpenter work.

John F. Sayward received \$1,433.10 for work done without contract in the Criminal Court Building. This bill was paid in three installments, but no authorization from the board of aldermen to let this work without contract was found attached to the warrants.

Very few actual violations of the charter with respect to the purchase of supplies without contract can occur, owing to the vigilance of the comptroller. In the following case the spirit of the charter, at any rate, was violated, as the work clearly should have been foreseen and accomplished by means of a contract.

The floating baths obviously were used to distribute patronage as well as to afford recreation to boys and girls in summer.

In 1905 the repairs on the baths were apparently chiefly made by Boyce & Lynch, carpenters. For their work they were paid as follows:

Aug. 1, 1905, warrant	10,467	.....	\$861.39
Sept. 18, 1905, "	12,741	.....	810.00
Oct. 13, 1905, "	14,367	.....	765.50
			<hr/>
			\$2,436.89

Thus a two-thousand dollar carpenter job was handled without public contract by the simple device of making the payments in three installments (all charged to the same account) in sums safely under the \$1,000 limit.

The baths also afforded a \$362.69 plumbing job to Edward O'Brien at the same time.

An interesting fact in connection with the expenditure for painting without public contract relates to the payment of exactly \$1,000 in one warrant to James McCleery, who received altogether \$9,402.91 in 1904 and \$11,338.48 in 1905, a total of \$20,741.39. Five others participated in the payments for painting, Thomas W. Nugent receiving \$5,379.57 and Lawrence Kelly \$3,146.87 during the two years. By dividing the total amount expended for painting by the total number of bills, the sum of approximately \$400 per bill is gained.

Much the same story is revealed by an examination of the other items. For electrical work and supplies the Electric Carriage Call Company received \$8,750 in 1904 and \$10,858.42 in 1905, a total of \$19,608.42; H. Hurwitz, \$4,829.17 in 1904 and \$8,501.99 in 1905, a total of \$13,331.16.

For iron work, etc., the bulk of the amount expended went to the Victor Heating Company, which received \$5,289.60 in 1904 and \$4,289.65 in 1905, a total of \$10,579.25; to P. J. Byrne, whose bills in 1904 amounted to \$5,097.57, to which \$150 was added in 1905, making a total of \$5,247.57.

Most of the mason work was performed by John R. Gray, who received \$4,429.55 in 1904 and \$4,687.59 in 1905, a total of \$9,117.14. Caspar Haus got \$1,873.91 in 1904 and \$2,894.35 in 1905, the total being \$4,768.26.

One man, Charles Gateson, by name, did all the work in connection with awnings and pipe coverings, and was paid \$11,867.77 in sixty-five warrants, an average of about \$182 per warrant.

The storage, etc., of floating baths might easily have been done by contract, and probably more economically. Charles L. Rogers and Bro. got \$2,465.75 for storage in 1904 (11 bills) and \$3,212.77 in 1905 (12 bills) the amount of service performed being the same in both years. John J. Coakley got \$790.50 for anchoring baths in 1904 and \$1,113.00 for the same work in 1905. For towing, Flannery's Towing Line received \$883 in 1904 and for the same work \$987 in 1905. In each instance the expenditure in 1905 was greater than in 1904.

The firm of Murphy Bros. did all of the extra work on the Allen Street public bath, and was paid in six warrants, two of which were for \$930 each for erecting steel drip pans under the sidewalk before the bath. The work on other public baths in 1904 was performed by Alfred Beinbauer, and in 1905 by Patrick Gallagher. The roofing work was divided between John McCarthy and M. Keavy. The former received \$5,316.62 in 1904 (30 bills) and \$6,478.92 in 1905 (28 bills), a total of \$11,795.54, about one-tenth of which was for repairs to sprinklers, while the latter received \$3,636.68 in 1904 and \$655.20 in 1905, a total of \$4,293.88.

INCIDENTAL EXPENDITURES.

The incidental expenditures of the borough president and his subordinates are extremely interesting, inasmuch as they show what large amounts may be expended in the course of a year upon items that are insignificant in themselves. These incidentals, the chief item of which was car fare, reached a total of \$19,457.59 in 1904 and \$21,493.03 in 1905, a grand total of \$40,950.62. In each year the borough president requisitioned \$3,000 himself, in twelve monthly installments of \$250 each, while his various bureaus expended the remainder, the details being given herewith:

Bureau.	Amount Expended in 1904.	Amount Expended in 1905.	Total.
Borough President's requisitions, and			
Bur. of pub. bldgs. & offices.....	\$7,005.39	\$8,183.84	\$15,189.23
Bur. of eng. of st. openings.....	168.85	165.14	333.99
Bur. of highways.....	9,339.79	9,720.38	19,060.17
Bur. of incumbrances.....	780.65	840.50	1,621.15
Bur. of buildings.....	2,162.91	2,583.17	4,746.08
Total	\$19,457.59	\$21,493.03	\$40,950.62

CAB, BUGGY AND LIGHT WAGON HIRE, FOR THE USE OF THE BOROUGH PRESIDENT, HEADS OF BUREAUS, AND INSPECTORS.

The details relating to the expenditures for cab, coach, wagon, buggy and horse hire (not including carting), are as interesting as those concerning 'incidentals'. For cab hire, etc., in 1904, no less than \$23,299.87 was expended; in 1905, the amount was \$26,790, a total of \$50,089.87 for the two years. The names of the principal beneficiaries are:

Name.	1904.	1905.	Total.
N. Y. Cab Co. Ltd.....	\$1,680.00	\$1,680.00	\$3,360.00
James J. Smith	1,680.00	1,680.00	3,360.00
Edward Monaghan	1,680.00	1,680.00	3,360.00
Martin P. Byrnes	1,652.90	1,680.00	3,332.90
George Forn	1,562.58	1,680.00	3,242.58
John McGovern	1,540.00	1,680.00	3,220.00
John C. Mulligan	1,540.00	1,680.00	3,220.00
John J. Timmins	1,200.00	1,400.00	2,600.00
William Jones	980.00	1,680.00	2,660.00
William Grandon	1,120.00	1,120.00	2,240.00
M. Kane & Son	849.03	1,020.00	1,869.03
John J. Mara	960.00	960.00	1,920.00
Albert E. Crabtree	900.00	950.00	1,850.00
Thomas J. Buckley	1,040.00	800.00	1,840.00
George Reilly	800.00	960.00	1,760.00
H. Rosenbloom	335.00	1,290.00	1,625.00
Dennis Duff	632.00	960.00	1,592.00
Riverside Stable Co.	560.00	860.00	1,420.00
John F. Ryan	615.35	800.00	1,415.35
Cornelius McAuliff	800.00	480.00	1,280.00

Of the total amount expended for cab hire, etc., about \$36,000 was applied to the accounts of the bureau of highways. The remainder was distributed among the bureaus of sewers, incumbrances, buildings and public buildings.

EXPERT SERVICES.

Under the terms of the charter the borough president has power to appoint consulting engineers of highways, sewers, and public buildings, and a consulting architect. He has control of the Unsafe Building Fund, and any expenditure he makes in this connection become a lien against the property demolished. For professional services relating to the highways, public buildings, and unsafe buildings, etc., the sum of \$21,-873.44 was expended in 1904, and \$80,050.63 in 1905, the total being \$101,924.07.

To F. Stuart Williamson, as consulting engineer of the Riverside Drive Extension, \$37,203 was paid in 1904-1905, the amount audited in 1905 being \$30,998.

Surveyors for the highways received about \$33,000 in the two years, the principal items being as follows: A. P. Hartman, \$12,779.59; George C. Wheeler, \$7,826.92; Frederick Reinert, \$7,444.31; C. A. Crane, \$2,104.26; J. W. Howard, \$1,550.00; Charles S. Towle, \$936.84.

About \$19,400 was expended for professional services in connection with public buildings, \$11,400 of this amount being utilized for the new Hall of Records. Bernstein and Bernstein, architects, received \$5,821.20 for general services in the two years. The large amounts expended for the Hall of Records were: Lewinson and Just, consulting engineers, \$3,645.49; Charles Frederick Hoffman, real estate expert, \$3,500; C. O. Mailloux, \$2,576.99; Albert L. Webster, for superintending plumbing, \$1,182.83—all in 1905.

Surveys for the bureau of buildings and other professional service cost \$7,740.50 in the two years. The commission to investigate the Hotel Darlington disaster received \$1,500; and the following are the larger sums paid out for surveys: John P. Benson, \$1,325; F. S. Benedict, \$1,025; Charles I. Berg, \$800; Joseph Wolf, \$575; Ernest Greene, \$550; Edgar Josselyn and D. Er Witt Ward, \$525 each; Charles W. Stoughton, \$400.

OTHER EXPENDITURES.

Other notable expenditures without public contract appear in the records. For removing and shoring unsafe buildings, \$65,332.03 was paid out in 1904 and \$25,221.77 in 1905, a total of \$90,553.80. Of this amount Thomas J. Dunn received \$60,416.43 in 1904 and \$25,221.77 in 1905, a total of \$85,638.20, while Canavan Bros. were paid \$4,590.66 in 1904. *Ten of the Dunn warrants were for more than \$1,000 a piece, and bore no contract numbers, indicating that the legal limit for the amount to be paid for work without contract had been exceeded.*

Street signs and incidental supplies and repairs came to a trifle more than \$7,000 during the two years, the Empire Ornamental Glass Company receiving \$5,231.76, paid in seventeen bills, the remainder being divided among four firms.

For removing street obstructions, P. Corrigan received \$5,489.69 in 1904 and \$6,836.90 in 1905, a total of \$12,326.59, paid in forty-three warrants. The sum of \$16,614.77 was charged to cartage in the two years. Of this amount John Collins received \$6,084.10 in 1904 and \$7,058.67 in 1905, \$13,142.77 in all. The remainder went to two other firms. Nearly the whole amount involved in this particular item of cartage was expended by the bureau of public buildings and offices. Carting in the bureaus of highways and sewers is charged to payroll and is not included in the above items.

The bureau of sewers paid \$48,447.60 for repairing and rebuilding sewers and for supplies, such as manhole covers and frames. The Hicky Contracting Company got \$10,071.64 in 1904 and \$25,851.75 in 1905, a total of \$35,923.39, for repairing and rebuilding. For manhole covers, frames, etc., \$5,113.13 was paid to George H. Toop in 1904 and \$4,926.53 in 1905, a total of \$10,039.66. The rest of the expenditure was divided among three firms.

The most notable expenditures without public contract of the bureau of highways were: Carting and removing paving block, \$9,024.45, to the Phenix Construction Company; repairing tools, \$4,018; for draughting and engineering supplies, \$2,250; for breaking stone, \$750; for monument stones, \$700. The bulk of the amount for repairing tools went to L. Carlin, who received \$3,472.05 in the two years. Most of the draughting supplies were purchased from the firm of Schwenke, Kirke Co., which received \$1,055.47 in 1904 and \$923.58 in 1905, a total of \$1,979.05. Breaking stone was done by Martin Berger, while W. McGrath supplied the monuments.

PAVING WITHOUT CONTRACT.

For restoring and renewing pavements (principally asphalt) the bureau of highways expended without public contract the following amounts:

Year.	Amount.	No. of warrants.	No. of companies and firms participating.
1904.....	\$70,863.87	1,618	17
1905.....	110,890.64	1,402	23
	<hr/>	<hr/>	<hr/>
Total.....	\$181,754.51	3,020	40

The details of this expenditure are to be found in the following table.

	Year 1904 and amount	No. of warrants in 1904.	Year 1905 and amount.	No. of warrants in 1905.	Total amt. for the two years.	Total no. of warrants.
Barber Co.....	\$30,820.43	688	\$44,478.35	398	\$75,298.78	1,086
Sicilian Co.	10,870.27	282	16,588.91	300	27,459.18	582
Warren Scharf Co.....	8,851.25	165	15,653.33	134	24,504.58	299
Uvalde, Co.	3,611.67	132	8,842.69	112	12,454.36	244
Fruin Bambrick Co.....	4,486.87	72	6,240.63	64	10,727.50	136
Atlantic Alcatraz	5,994.11	92	2,123.18	73	8,117.29	165
Hastings Co.	2,506.89	52	4,752.57	96	7,259.46	148
Asphalt Const. Co.....	1,539.40	67	3,934.30	117	5,473.73	184
Mack Paving Co.....	764.26	9	1,250.91	6	2,015.17	15
Degnon Contracting Co.	22.96	1	1,761.09	5	1,784.05	6
Continental Co.	549.86	27	1,116.61	27	1,666.47	54
U. S. & Venezuela Co...	.....	..	1,498.35	30	1,498.35	30
Standard Paving Co....	97.13	8	1,021.47	13	1,118.60	21
Metropolitan Paving Co.	556.89	15	160.83	8	717.72	23
Warner-Quinlan Co.....	96.13	4	366.16	6	462.29	10
Samuel Weil .....	.....	..	404.00	1	404.00	1
U. S. Wood Preserving Co.	22.56	2	341.96	3	364.52	5
Matthew Baird Contract- ing Co. ....	.....	..	269.79	2	269.79	2
Abbott, Gamble Co.	40.30	1	30.24	1	70.54	2
William Booth	32.89	1	35.98	3	68.87	4
A. Mollinelli .....	.....	..	9.46	1	9.46	1
N. Y. & Bermudez Co..	.....	..	6.83	1	6.83	1
Asphalt Paving Co.....	.....	..	3.00	1	3.00	1

Four warrants for restoring and renewing were made out for over \$1,000 in each instance. As no contract numbers appeared against the warrants, it is assumed that the legal restriction was exceeded.

CARE OF PUBLIC BUILDINGS.

Besides exercising its functions as purchasing agent, the bureau of public buildings and offices has under its supervision certain public buildings, markets, corporation yards, and offices. The following table shows the number of these buildings, exclusive of public baths and comfort stations, under the control of the bureau, during the years 1902, 1903, 1904 and 1905, together with the total payroll for those years. Public baths and their payrolls are discussed in the following chapter:

Year.	Public buildings, Court Houses, etc.	Markets and cor- poration yards.	Offices as specified in reports of B. P.	Payroll.
1902.....	31	13	6	\$269,856.38
1903.....	29	11	6	288,330.71
1904.....	31	12	6	328,146.36
1905.....	29	11	7	351,322.61

From the foregoing it will be seen that although the number of buildings and markets cared for by the bureau in 1905 was four less than the number under supervision in 1902, the payroll for 1905 was greater by \$81,466.23 than the 1902 payroll.



An example of isles of safety. These are placed in the roadway to divide the stream of traffic and to afford a place of safety for crossing pedestrians.



**Front elevation, East 11th Street bath.
Arnold W. Brunner, Architect.**



**Front elevation, East 76th Street bath.
Stoughton & Stoughton, Architects.**

PUBLIC BATHS.

During the past five years the City of New York has authorized the expenditure of nearly \$3,000,000 for the construction of free public baths. By so doing it has recognized both the present impracticability of compelling an adequate provision of bathing facilities in the tenements, and the existence of a large number of people in these tenements for whom the absence of home bath tubs constitutes a privation. It is not believed, however, that any one justifies the expenditure of vast sums of the city's money merely on the ground that by such means certain members of the community are made physically comfortable. On the contrary, the public provisions of free bathing facilities involves two assumptions: First, that bathing is a means of safeguarding the public welfare by the prevention of disease and by raising the standard of personal cleanliness and morality; second, that by the maintenance of free public baths universal bathing is more nearly and most economically accomplished.

In discussing the building and administration of the Manhattan public baths it has seemed desirable to institute a comparison in cost and method with the Brooklyn system of public baths, managed with great economy and more in the interest of the public. The comparison is wholly fair because the problems of administration in the two boroughs are closely similar. By means of the comparison it is possible to give just emphasis to the inefficient and extravagant manner in which the baths in Manhattan are operated.

HISTORY OF THE FREE PUBLIC BATH MOVEMENT IN NEW YORK.

In 1895 the New York Legislature enacted a law requiring cities of the first and second classes to establish and maintain such number of free, public baths, other than river or ocean baths, as might be deemed necessary by their local boards of health.

In 1896 an expenditure of \$200,000 was authorized for the building of one public bath and several comfort stations in New

York. In the following year work began on the Rivington Street Bath, which was completed three and one-half years later, at a total cost of \$100,000.

No further steps were taken by the city toward increasing the facilities for public bathing until 1902. In June of that year, a stock issue of \$125,000 was authorized, after considerable agitation of the matter by various civic organizations in Brooklyn, for the purchase of five sites for baths, and the erection of one bath in that borough.

In June, 1902, as a result of insistent petitions from philanthropic organizations, the Board of Estimate and Apportionment authorized an issue of stock to the amount of \$105,000 for the purchase of sites and the construction of public baths in Manhattan.

Since that date additional authorizations have increased the total stock issues for public bath purposes to \$803,522 for Brooklyn, and \$2,086,335 for Manhattan.

Of these totals an authorized stock issue of \$345,000, made in 1904, for the construction of baths in Brooklyn, is yet unexpended. Likewise, \$300,000 authorized for sites and construction of public baths in the borough of Manhattan, in 1905, is available for baths in addition to those now building:

The following is a list of authorizations:

MANHATTAN.		BROOKLYN.	
1902.		1902.	
June	\$105,000	June	\$125,000
July	220,000	December	28,000
October	83,000		
1903.		1903.	
April	5,000	March	90,000
July	648,500	August	211,600
December	75,000		
1904.		1904.	
May	633,000	May	345,000
1905.			
March	300,000		
Total	\$2,069,500	Total	\$799,600.00
Premiums	16,853.33	Premiums	3,922.85
Grand Total....	\$2,086,335.33	Grand Total	\$803,522.85

On the basis of these authorizations the city has entered into contracts for buildings now in course of construction, and has erected baths as follows:

MANHATTAN.

Baths Completed.

West 41st Street Bath, opened November, 1904.....	\$142,794.18
East 109th Street Bath, opened March, 1905.....	137,780.60
Allen Street Bath, opened November, 1905.....	134,440.94
East 11th Street Bath, opened December, 1905.....	151,467.82
East 76th Street Bath, opened January, 1906.....	124,640.73
Total	\$691,124.27

Baths in Course of Construction, May 1, 1906.

West 60th Street Bath, contract let, Dec., 1903.....	\$149,055.02
East 23rd Street Bath, contract let, Jan., 1905.....	273,052.50
Total	\$422,107.52

New Bath Sites.

Rutgers Place	\$70,000.00
Carmine Street (to be acquired by condemnation; price asked excessive)	
East 54th Street	72,500.00
Total	\$142,500.00

Grand Total \$1,255,731.79

Total authorization for baths in Manhattan.....	\$2,086,335.33
Total expenditures to date for baths in Manhattan.....	1,255,731.79

Total funds available, May, 1906, for additional baths in Manhattan	\$830,603.54
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BROOKLYN.

Baths Completed.

Hicks Street Bath, opened September, 1903.....	61,792.56
Pitkin Avenue Bath, opened October, 1903.....	88,456.12
Montrose Avenue Bath, opened October, 1904.....	96,041.80
Huron Street Bath, opened April, 1905.....	103,724.35
Duffield Street Bath, opened October, 1905.....	110,993.28
Total	\$461,008.11

Baths in Course of Construction, May 1, 1906.

N. E. Cor. President and 4th Avenues.....	\$118,700.00
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New Bath Sites.

Nostrand Avenue	\$5,500.00
N. E. Cor. Hamburg and Willoughby Avenues....	7,500.00
Total	<u>\$13,000.00</u>
Grand Total	<u>\$592,708.11</u>
Total authorization for baths in Brooklyn	\$803,522.85
Total expenditures for baths to date in Brooklyn.....	<u>592,708.11</u>
Total funds available, May, 1906, for additional baths in Brooklyn	<u>\$210,814.74</u>

The construction of the Rivington Street Bath, the first to be erected in Manhattan, consumed three and a half years. In the same way it required over two years to complete the West 41st Street Bath. On the other hand, the opening of the Pitkin Avenue Bath in Brooklyn was accomplished in ten months after the awarding of the contract.

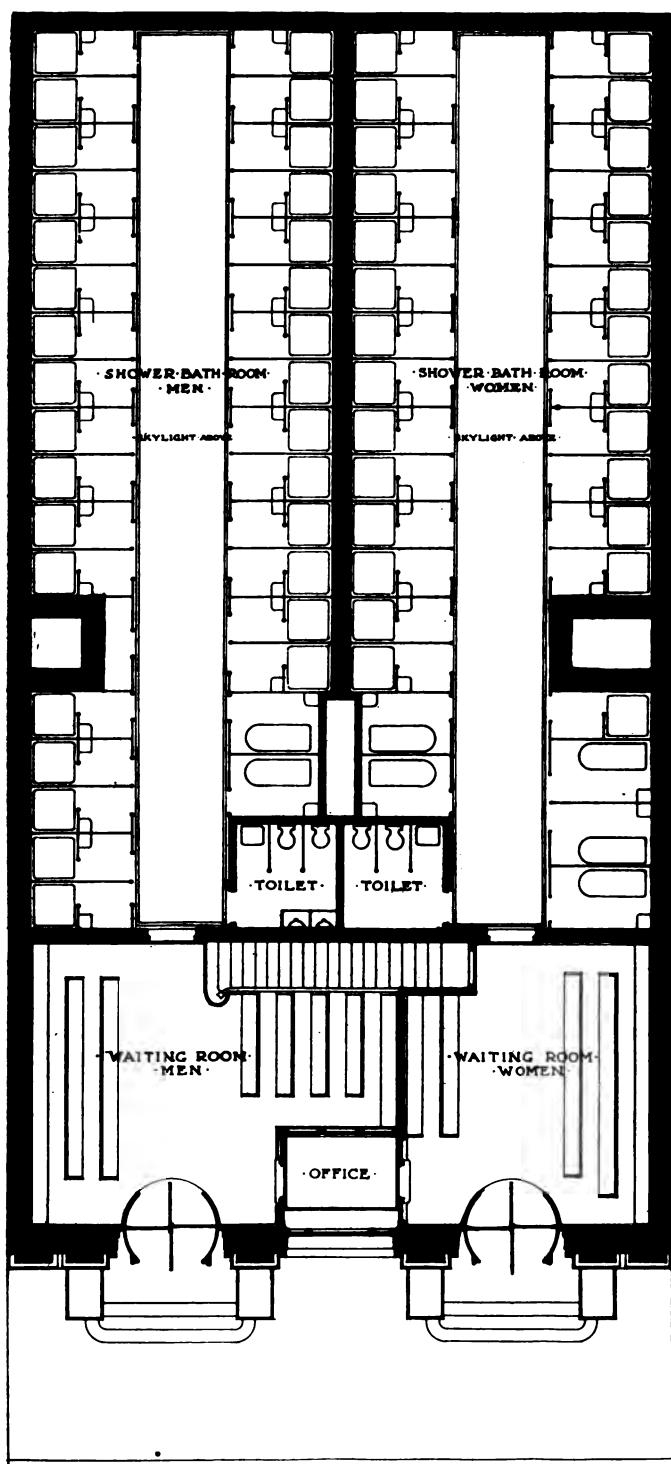
A comparative statement of the time required for the completion of the various baths in the two boroughs will serve as an interesting commentary on the efficiency of the superintendents of public buildings and offices in the two boroughs, the officials entrusted with supervising the work of the contractors for the baths.

MANHATTAN.

Bath.	Contract awarded.	Opened.	Time required in building.
Rivington Street	September, 1897	March, 1901	3 years, 6 mos.
W. 41st Street	November, 1902	November, 1904	2 years
E. 109th Street	October, 1902	March, 1905	2 years, 5 mos.
Allen Street	October, 1903	November, 1905	2 years, 1 mo.
E. 11th Street	December, 1903	December, 1905	2 years
E. 76th Street	March, 1904	January, 1906	1 year, 10 mos.
		Unopened.	
W. 60th Street	December, 1903	May, 1. 1906	
E. 23d Street	January, 1905	May, 1. 1906	

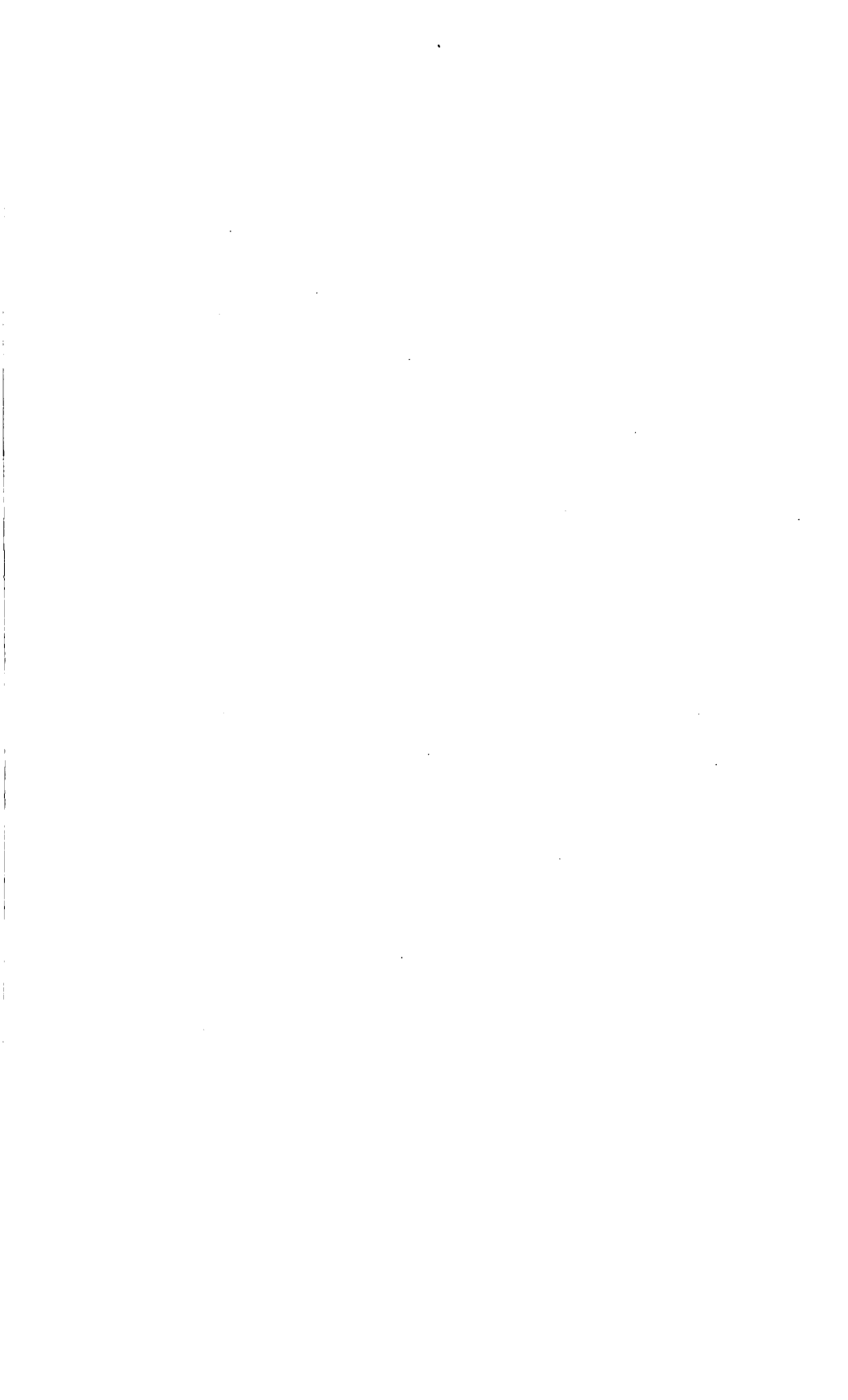
BROOKLYN.

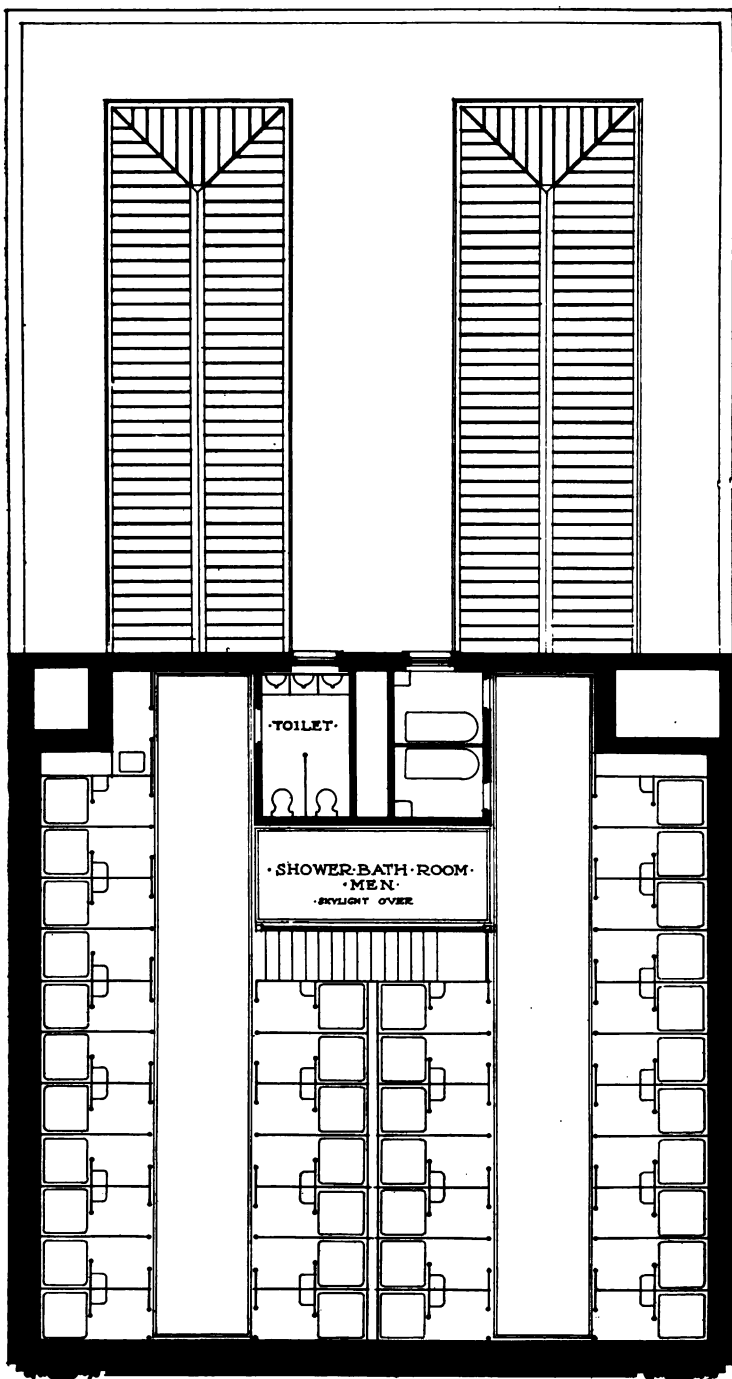
Bath.	Contract awarded.	Opened.	Time required in building.
Hicks Street	November, 1902	September, 1903	10 mos.
Pitkin Avenue	February, 1903	October, 1903	9½ mos.
Montrose Avenue	July, 1903	October, 1904	1 year, 3 mos.
Huron Street	October, 1903	April, 1905	1 year, 6 mos.
Duffield Street	December, 1903	October, 1905	1 year, 10 mos.



FREE PUBLIC BATHS
 EAST 11TH ST.
 ARNOLD W. BRUNNER
 ARCHITECT

FIRST FLOOR PLAN





FREE PUBLIC BATHS
 EAST 11TH ST.
 ARNOLD W. BRUNNER
 ARCHITECT

SECOND FLOOR PLAN

It will have been seen that it required twice as long to build a public bath in Manhattan as in the Borough of Brooklyn. The superintendent of public buildings and offices in Manhattan attributes the slowness with which baths erected during his term of office have been brought to completion to "unforeseen obstacles and unavoidable accidents." Whether the objection of an architect, for example, to marble below specification might be classed in either of these categories can only be surmised, but it is known that contractors who repeatedly commit the offense of attempting to use inferior materials and are, in consequence, delayed in rushing the building through by a conscientious architect, have never been subjected to the contract penalty for exceeding the time allowance.

Not only has it required a greater length of time in Manhattan than in Brooklyn to open baths for public use after money has been appropriated for them, but the baths have cost more in Manhattan on the basis of units than they have in Brooklyn.

The following table shows the total cost of six Manhattan and five Brooklyn baths, including the cost of sites where these were acquired by the city expressly for bath purposes; the number of bath units in each bath, and the cost per bath unit in each case. The West Sixtieth Street Bath and the Twenty-third Street Bath, in Manhattan, were omitted from this table, owing to the fact that these baths contain pools, a condition which renders invalid their comparison in cost per bath unit, with baths containing only showers and tubs.

MANHATTAN.

Baths Completed.	No. units.	Total cost.	Cost per unit.
Rivington Street	77	\$100,000.00	\$1,298.70
West 41st Street.....	103	142,794.18	1,386.35
East 100th Street	129	137,780.60	1,068.06
Allen Street	98	134,440.94	1,371.84
East 11th Street	103	151,467.82	1,470.56
East 76th Street	113	124,640.73	1,103.01

623 \$791,124.27

BROOKLYN.

Baths Completed.	No. units.	Total cost.	Cost per unit.
Hicks Street	63	\$61,792.56	\$980.83
Pitkin Avenue	96	88,456.12	921.41
Montrose Avenue	99	96,041.80	970.12
Huron Street	100	103,724.35	1,037.24
Duffield Street	99	110,993.28	1,121.14

457 \$461,008.11

Actual cost per bath unit* in Manhattan.....\$1,269.86
Actual cost per bath unit in Brooklyn.....\$1,008.77

*The term "unit" is used to indicate the separate bath stalls consisting of shower and dressing room or bath-tub room.

Baths Containing Pools Under Construction.

	No. units.	Total cost.	Cost per unit.
West 60th Street	230	\$149,055.02	\$648.06
East 23rd Street	154	273,052.50	\$1,773.06

The extremely high cost of the East Twenty-third Street Bath is partly owing to the fact that the isolation of the building has warranted a monumental treatment of its exterior on three sides.

The difference in cost per unit between the Manhattan and Brooklyn baths, observed in the foregoing table, is not wholly due to extravagance in the construction of the Manhattan baths. A comparison of the cost per bath unit of the baths of Manhattan and in Brooklyn shows that while the actual cost per unit in Manhattan, including the cost of site, was \$261.09 greater than in Brooklyn, exclusive of site it was only \$94.37 greater.

The following are the detailed costs per unit, exclusive of site, in the two boroughs. These figures may serve as a guide to other communities contemplating the erection of public baths similar to those in New York City.

MANHATTAN.

Bath.	Site.	Units.	Cost of building.	Cost per unit exclu- sive of site.
Rivington Street.....City Property		77	\$100,000.00	\$1,298.70
West 41st Street	\$33,750.00	103	109,044.18	1,058.68
East 109th Street	19,000.00	129	118,780.60	920.78
Allen Street	35,331.65	98	99,109.29	1,011.32
East 11th Street	42,000.00	103	109,467.82	1,062.79
East 76th Street	11,000.00	113	113,640.73	1,005.67
Total	\$141,081.65	623	\$650,042.62	

Baths Containing Pools Under Construction.

Bath.	Site.	Units.	Cost of building.	Cost per unit exclu- sive of site.
West 60th Street	\$12,750.00	230	\$136,305.02	\$592.63
East 23rd Street	City property	154	273,052.50	1,773.06

BROOKLYN.

Hicks Street	\$3,750.00	63	\$58,042.56	\$921.31
Pitkin Avenue	4,000.00	96	84,456.12	879.75
Montrose Avenue	250.00	99	95,791.80	967.59
Huron Street	5,800.00	100	97,924.35	977.24
Duffield Street	13,500.00	99	97,493.28	984.78
Total	\$27,300.00	457	\$433,708.11	

Actual cost per bath unit in Manhattan, exclusive of sites and baths under construction	\$1,043.40*
*Actual cost per bath unit in Brooklyn, exclusive of sites and baths under construction	\$949.03.

The scheme for the use of the pool at the East Twenty-third Street Bath (Manhattan), where no separate cleansing showers and dressing rooms for the exclusive use of pool bathers are provided, will not permit more than 154 persons to use the bath at one time. This number is limited by the number of dressing, shower and tub stalls. The cost of installing the pool in this bath is not, therefore, offset by a proportional increase in capacity, so that this bath will cost per unit upwards of \$1,700, nearly three times the cost per unit of the West Sixtieth Street Bath and considerably more than any of the other baths now built either in Manhattan or in Brooklyn.

In theory the West Sixtieth Street Bath (Manhattan) will accommodate 230 bathers at one time. This is crediting the pool and the 34 open cleansing showers built in connection with it, with a capacity of 160 bathers. One hundred and sixty is the number of dressing stalls for the use of pool bathers. Whether in actual practice it will be possible to admit 160 bathers in the pool section of the bath remains to be demonstrated. In practice a time limit will be placed on swimmers during times of heavy patronage so that not more than 80 swimmers (the estimated capacity of the pool) will be permitted to swim at one time. While this number is in the pool it will be possible to admit a maximum of 80 other persons to the unoccupied dressing stalls and cleansing baths, and so on. If this prove feasible, the cost of the West Sixtieth Street Bath will be the lowest of all baths now built, on the base of units or capacity.

USE OF THE BATHS.

In Manhattan there are in operation 623 public bath units and in Brooklyn 457. The law requires that each bath be open no less than fourteen hours per day. The average length of time for which a bather is permitted to occupy a bath is twenty minutes. Each bath unit, therefore, is capable of providing a maximum of 42 baths per day. If all the baths were in constant use fourteen hours a day, 60,000 persons would enjoy free baths daily.

*The lower cost per unit in Brooklyn is the more notable because the Brooklyn baths are of smaller capacity

MANHATTAN.

Bath.	Maximum, possible daily number of baths.	
Rivington Street	3,234	
West 41st Street	4,326	
East 109th Street	5,418	
Allen Street	4,116	
East 11th Street	4,326	
East 76th Street	4,746	
Total Capacity Opened		26,166
West 60th Street*	9,660	
East 23rd Street*	6,468	
Total Capacity All Baths		43,294

BROOKLYN.

Bath.	Maximum, possible daily number of baths.	
Hicks Street	2,646	
Pitkin Avenue	4,032	
Montrose Avenue	4,158	
Huron Street	4,200	
Duffield Street	4,158	
Total Capacity		19,194

The actual attendance is, as a matter of fact, considerably less than the capacity of the baths. Men patronize the baths in larger numbers than women. The capacity of the several baths in operation in the period from April 1 to December 1, 1905, by sexes and the actual attendance by sexes follow. The figures for attendance were taken from the records of the superintendent of public baths, in Manhattan and Brooklyn. In Manhattan these records are based upon the estimates of attendance made by the attendant in charge of the several baths, there being no absolute method of recording the patronage at any of the baths in that borough.

MANHATTAN.

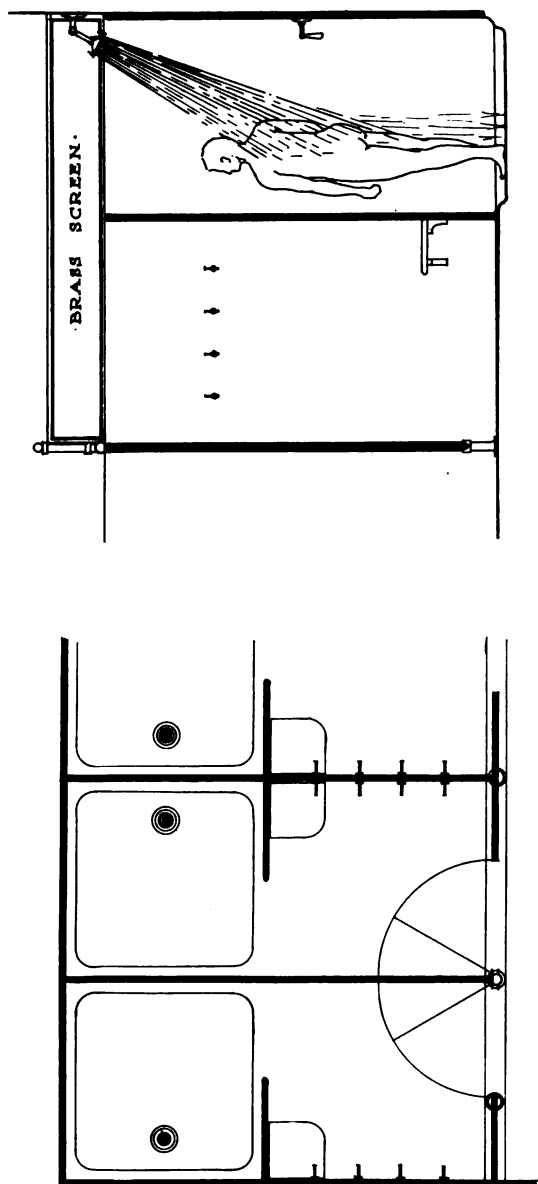
Bath.	Max., pos- sible daily baths.		Average, actual number baths.	
	Male.	Female.	Male.	Female.
Rivington Street	2,100	1,034	1,761	1,001
West 41st Street	2,982	1,344	592	475
East 109th Street	3,948	1,470	741	363

BROOKLYN.

Bath.	Max., pos- sible daily baths.		Average, actual number baths.	
	Male.	Female.	Male.	Female.
Hicks Street	1,890	756	1,576	755
Pitkin Avenue	2,730	1,302	974	360
Montrose Avenue	2,856	1,302	1,385	921
Huron Street	2,898	1,302	854	411

*Unopened May 1, 1906.

·DETAIL·OF·SHOWER·BATH·COMPARTMENTS·



PLAN

·SECTION·

·FREE·PUBLIC·BATHS·
·EAST 11TH ST·
·ARNOLD W. BRUNNER·
ARCHITECT

Partitions; Tennessee marble; floor, cement; seat, wood. Note location of drain off center to avoid obstruction by the feet of the bather.

The period covered in the above comparison is the period during which the baths are most generously used. The difference in the patronage during the winter months and during the summer months is striking.

AVERAGE DAILY PATRONAGE.

	Winter.		Summer.	
	January, February, March.		June, July, August.	
Manhattan.	Male.	Female.	Male.	Female.
Rivington Street	1,067	470	2,072	1,202
West 41st Street	340	86	1,373	685
Brooklyn.				
Pitkin Avenue	706	290	1,188	471
Montrose Avenue	540	279	1,849	1,282

The very marked difference in attendance at the Rivington Street Bath, which contains 77 bath units and the West Forty-first Street Bath, which contains 103 bath units, may be partly explained by the fact that the West Forty-first Street Bath was opened in November, 1904. A very important cause for this difference, however, is believed to lie in the fact that the Rivington Street Bath is located in the Jewish quarter. The Jews are regarded by the attendants as especially "good bathers."

COST OF OPERATION.

The actual average attendance, day by day, at the several baths, up to December 31, 1905, failed to justify the expectations of the authorities as indicated by the maximum capacity of the different institutions. By reason of the eight-hour law each bath must be provided with a double shift of employees for the fourteen hours during which it remains open. The cost of this service in the Manhattan baths greatly exceeded the cost in the Brooklyn baths in proportion to the number of bathers in the two boroughs. This fact reveals a disregard of business methods in the management of the Manhattan baths in that the number of attendants exceeded the requirement of the patronage. It will be recalled that during the period under review Martin W. Littleton was president of the Borough of Brooklyn.

The contrast in the number of bathers and in the cost between winter and summer months at the public baths indicates the extent to which bathing is due to a desire for physical comfort, rather than for health and cleanliness. It shows, also, the excessive expenditure for wages during the winter months when patronage is light.

On the showing of the next table, the cost per bather in Brooklyn was 48.3 per cent of the cost per bather in Manhattan.

MANHATTAN.

January 1—December 31, 1905.

Bath.	Supplies and repairs.	Pay roll.	Total expense.	Total baths given.	Cost in supplies & repairs.	Cost in pay-roll.	Total cost per bather.
Rivington ..	\$8,837.41	\$22,400.00	\$31,237.41	651,741	.0135	.0343	.0479
West 41st ...	7,306.23	21,047.50	28,353.73	275,464	.0265	.0764	.1029
East 109th*.	10,307.57	16,482.00	26,789.57	252,619	.0407	.0652	.1060
Totals ..			\$86,380.71	1,179,824			.0732

BROOKLYN.

January 1—December 31, 1905.

Hicks	4,288.34	12,454.99	16,743.33	619,850	.0069	.0200	.0270
Pitkin	6,648.35	12,517.49	19,165.84	396,037	.0167	.0316	.0483
Montrose ...	5,226.86	12,642.40	17,869.35	628,319	.0082	.0201	.0284
Huron** ...	5,629.53	9,416.18	15,045.71	299,390	.0188	.0314	.0535
Totals ..			\$68,824.23	1,943,596			.0354

The net cost to the city for each bath given in Brooklyn was further reduced by reason of the fact that a revenue is derived from the Brooklyn baths, through the supplying of soap and towels to the patrons, and a charge for the use of tub baths. Towels and soap are not supplied in the Manhattan baths, nor is any charge, whatsoever, made for the privilege of bathing either in a shower or a tub bath. The total revenue derived from this source in Brooklyn for the period under consideration, and from the baths in question, was \$5,130.78.

By deducting this amount from the total actual cost of all baths given at the four Brooklyn baths in question, a net actual cost per bather of \$.0327 is shown. With this deduction, the cost per bather in Brooklyn was 44.6 per cent of the cost per bather in Manhattan.

JANUARY-FEBRUARY-MARCH, 1905.

Manhattan.

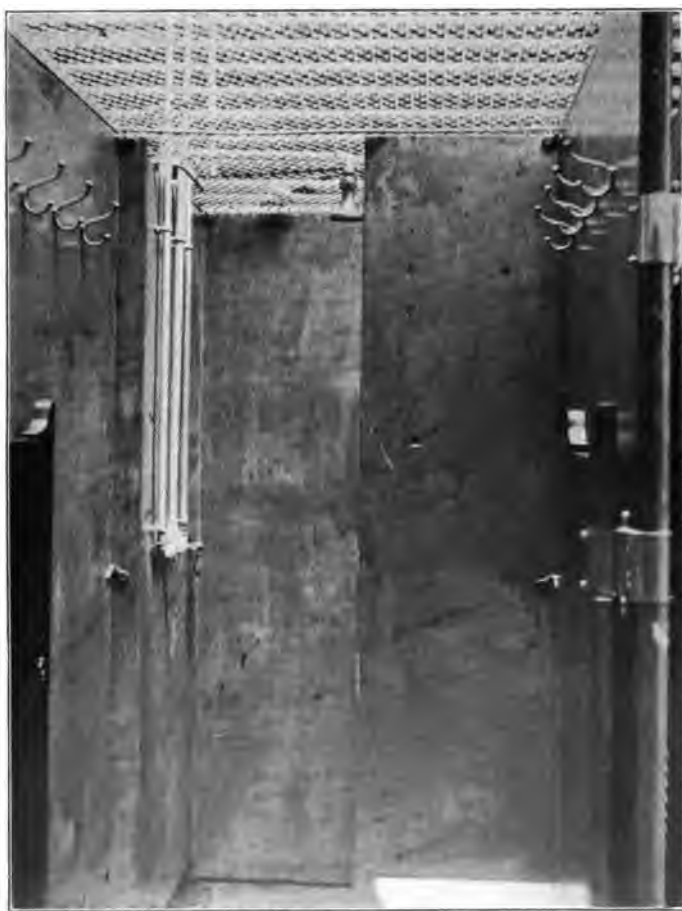
Baths.	Total bathers.		Total wage cost.		Wage cost per bather.	
	Male.	Female.	Male.	Female.	Male.	Female.
Rivington	86,495	38,050	\$2,913.00	\$2,946.00	\$.034	\$.077
West 41st	27,159	6,798	2,565.00	2,250.00	.094	.331

Brooklyn.

Hicks	52,808	13,906	1,814.37	1,289.37	.034	.093
Pitkin	57,185	23,472	1,814.37	1,289.37	.032	.055
Montrose	43,716	22,615	1,814.37	1,289.37	.042	.057

*The 109th Street bath was opened March 17, 1905. The figures for this bath, therefore, only cover the period between March 17 and December 31, 1905.

**The Huron Avenue bath was opened April 1, 1905. The figures for this bath, therefore, only cover the period between April 1 and December 31, 1905.



Dressing room and shower; showing type of
hot and cold water mixer on left.
West 60th Street bath.

JUNE, JULY, AUGUST, 1905.

Manhattan.

Baths.	Total bathers.		Total wage cost.		Wage cost. per bather.†	
	Male.	Female.	Male.	Female.	Male.	Female.
Rivington	175,462	102,726	\$3,007.66	\$2,180.57	\$.017	\$.021
West 41st	113,332	56,070	2,919.57	2,171.74	.026	.039
East 109th*.....	100,833	53,118	2,516.32	2,260.82	.025	.043

Brooklyn.

Hicks	160,883	86,657	1,814.37	1,289.37	.011	.015
Pitkin	98,624	39,091	1,814.37	1,289.37	.018	.033
Montrose	153,431	106,365	1,814.37	1,289.37	.012	.012
Huron**	110,918	55,049	1,814.37	1,289.37	.016	.023

A summary of the above table by boroughs will show the contrast in attendance and cost of operation between the cold and hot seasons:

WINTER MONTHS.

	Total bathers.		Total cost.		Actual cost per bather.	
	Male.	Female.	Male.	Female.	Male.	Female.
Manhattan	113,654	44,848	\$5,478.00	\$5,196.00	\$.048	\$.116
Brooklyn	153,709	59,993	5,443.11	3,868.11	.035	.064

SUMMER MONTHS

	Total bathers.		Total cost.		Actual cost per bather.	
	Male.	Female.	Male.	Female.	Male.	Female.
Manhattan	389,627	211,914	\$8,443.55	\$6,613.13	\$.022	\$.031
Brooklyn	523,856	287,162	7,257.48	5,157.48	.014	.018

It will have been noticed that, during the winter months at the West Forty-first Street Bath, Manhattan, the cost per female bather, for wages alone, was over \$.33, three times as much as the cost in wages for each female bather at the Brooklyn bath on Hicks Street, and four times greater than the cost in wages

*Opened March, 1905.

†The cost per bather in payroll in the male and female departments was determined as follows: For the male bathers, all male attendants plus one-half the wages paid engineers and firemen. For the female bathers, all female attendants plus one-half the wages paid engineers and firemen.

**Opened April, 1905.

per female bather at Rivington Street, in Manhattan. It will be interesting to observe in the following table the number of male and female attendants employed at the West Forty-first Street Bath during the winter months, the wages paid them by weeks, and the total number of male and female bathers for the corresponding weeks. The table will show, also, the cost per bather, by weeks, in wages paid attendants only, excluding the wages paid engineers and firemen. The number of male attendants remained constant while the number of male bathers increased over 180 per cent. The number of female attendants decreased two, while the number of female bathers increased over 186 per cent. Either the attendants were insufficiently occupied during the first two months or overworked when the patronage increased.

West Forty-First Street Bath, Winter.

Week Ending	Bathers.			Attendants.			Wage cost for attendants per bather.	
	Male.	Female.	No.	Male. Wages.	No.	Female. Wages.	Male.	Female.
Jan. 7	1,279	427	8	\$143.50	9	\$126.00	\$0.112	\$0.295
13	1,552	405	8	143.50	9	126.00	.092	.311
21	1,623	549	8	143.50	8	112.00	.088	.204
28	1,367	276	8	143.50	8**	116.00	.105	.420
Feb. 4	1,586	446	8	143.50	9	126.00	.091	.282
11	2,230	443	8	143.50	9	126.00	.064	.284
18	1,997	432	8	143.50	9	126.00	.072	.291
25	2,631	582	8	143.50	9	126.00	.055	.216
Mar. 4	1,241	512	8	143.50	9	126.00	.115	.246
11	3,143	596	8	143.50	9	126.00	.046	.211
18	2,096	664	8	143.50	8	112.00	.069	.168
25	4,048	672	8	143.50	7	98.00	.036	.145
31*	2,366	794	8	123.00	7	84.00	.052	.105

THE ADMINISTRATION OF THE PUBLIC BATHS SYSTEM.

The public baths in the several boroughs are under the jurisdiction of the respective borough presidents. Being public buildings they are assigned to the care of the superintendent of public buildings and offices. It was found at the very beginning of the development of the bath system that a chief supervising officer in addition to the superintendent of public buildings was necessary to properly administer the baths. Accord-

*This period is only six days.

**This week eight female attendants received full time pay for seven days. One female attendant received additional pay for overtime amounting to two full days pay.

ingly, a civil service position was established for this purpose with the title of superintendent of public baths and comfort stations. The superintendent is, in fact, merely an attaché in the office of the superintendent of public buildings. That officer is the president's representative as the official head of the public baths. The present incumbent of the position of superintendent of public baths is entrusted with no responsibility in their care and development. His authority is entirely limited to the execution of the orders of his superior, the superintendent of public buildings. The public baths employ, apparently, too many persons and involve the expenditure of too large a sum of money to be given over to a superintendent selected by civil service examination. This would not conform to President Ahearn's ideas of good administration. Complete responsibility for the manner in which the baths are administered in Manhattan, particularly, must be shared between the president and his appointee, the superintendent of public buildings and offices.

The attendants at the various baths are civil service employees but are placed on the list after a very superficial examination. In Manhattan they are not selected for their capacity to keep the baths in good clean condition, or their desire to become experts in the management of a bath. For many of them the job at an interior bath is a comfortable berth, with good pay, short hours, and little work. Many of the attendants have been transferred to the interior baths from the floating baths, as the interior baths have been opened. The slight duties exacted of the floating bath attendant has led some of those transferred to the interior baths to believe that they were intended merely as ornamental accessories to these institutions. The attendants are required to wear no uniforms, the only insignia of their position being a metal badge and, in the case of men, a white canvas cap. In several instances the women employees have refused to clean up the baths on the ground that they were attendants and not scrubwomen. The presence of four or five women-in-waiting in the reception room of a public bath is, possibly, a desirable thing; but ordinarily it constitutes a luxury without which the baths might better prosper. If the civil service examination does not classify the persons eligible to positions at public baths as workers, some change in the legal definition of attendants should promptly be made or the employees at the baths otherwise classified so that there may be no misunderstanding as to what constitutes the proper duties of a bath house attendant.

That the fault does not lie wholly in the civil service classification is attested by the fact that the attendants in the Brook-

lyn baths, who are drawn from the same civil service lists as are those in Manhattan, regularly clean the baths to which they are assigned. A more vigorous policy on the part of the Borough President with respect to the performance of their duties by the bath attendants, would doubtless put a prompt end to their imposition upon the city.

The charter requires that the superintendent of public buildings and offices shall be a practical builder or architect of long experience. As his chief duties are connected with the care and maintenance of public buildings he is not more qualified to administer the public bath system than he is to administer the jails or public libraries. It is unjust that he should be burdened with so important a social undertaking, which is, also, entirely without the field of his past experience, and apart from his legal qualifications for his office. The public bath system in New York is no small thing. It is unfair to the public baths that they do not have the intelligent, alert supervision of an official whose business it is to administer this department exclusively. If the completed bath system were to be administered by the standards of the present superintendent of buildings, it is doubtful whether the friends of public baths could conscientiously support large appropriations for new baths or for the maintenance of old baths.

In view of the showing of the cost of construction and administration, it would seem that the proper time has come for the City to establish a bureau of public baths under each borough president, coordinate with the bureau of public buildings and offices. This plan would definitely locate in one man the responsibility for developing the patronage of the baths and insure their full utilization by the community.

It is believed that the efficiency of the administration of the public baths system would be increased, if each bath were placed in charge of a responsible foreman or superintendent, who would be held accountable for the conduct of the attendants and the cost per bather to the city. These foremen or superintendents should be directly responsible to the head of the public baths bureau, who would in turn be responsible to the borough president. As the organization now stands, there is merely a nominal attendant in charge at the several baths, nor is he in any position to know what the cost of operating his bath is, any more than he is responsible for the cost. With this responsibility would come a desire, on the one hand, of increasing the attendance of the baths, and on the other hand, of decreasing the cost of operation. Absolute economy in the



The pool in the West 60th Street public bath, showing cuspidors and gutters at the end of the pool to carry off the surface waste. The dimensions of the pool are 35 by 60 feet.

operation of the baths cannot be achieved without definite knowledge of what it costs the city to give a single bath at any time. At present there is no means whereby this information can be secured with exactness, either in Manhattan or in Brooklyn.

In Brooklyn, a correct account of all expenditures for supplies and repairs is kept by the bookkeeper in the office of the commissioner of public works. It is impossible to determine with accuracy, however, what the cost at each bath is for wages. As a general rule, each bath has the same complement of employees, but frequent variations are made from this complement by reason of absences and transfers.

In Manhattan, each payroll definitely indicates the number of employees at each bath and the amount due and owing them. No ledger account, however, is kept of these payroll charges. In order to secure information concerning the payroll for the Manhattan baths upon which the tables in this report are based, it was necessary to have the rolls gathered from the vaults in the city paymaster's office, and to collect from these the information desired. It would be a very simple thing to keep an accurate account of these weekly payments in wages in the office of the superintendent of public buildings, where there is already a sufficient clerical force to perform this work.

Neither is a ledger account kept in Manhattan, showing the expenditures for repairs and supplies at the several baths. The information for the tables in this report was secured from an unclassified daybook in the office of the superintendent of public buildings, into which are entered the vouchers drawn for these items. That a carefully posted ledger showing these charges is not kept can only be attributed to indifference or an absence of the realization of the importance of this information as the basis for efficient management.

If a bureau of public baths were created, this information could be kept there, in a manner which would permit of a ready determination of the cost involved in the operation of each of the several baths.

To determine the cost per bather to the city, it is necessary to know, with accuracy, the actual number of bathers at each of the baths every day in the year. This information cannot be secured now in Manhattan.

In Brooklyn the selling of soap and the provision of towels, in addition to the charge for the tub baths, serves to record with accuracy the number of daily bathers. Each bather is given a check which is numbered and indicates whether he has received a towel or not. The duplicate of this check is kept in the office. By means of these duplicates a reliable record of attendance is secured.

In Manhattan, no towel or soap is provided nor is any charge made for the use of the baths. The estimates of the daily attendance are purely guess-work on the part of the attendants who, presumably, have some interest in making the patronage appear as large as possible. When the attendance is at all large, it is practically impossible to determine the number of bathers. Estimates are based upon the number of times a certain stall was in use, and the average time consumed by each bather in bathing and dressing. As the stalls are not numbered it is reasonable to assume that the memory of the attendants would become confused.

In order to determine the degree of inaccuracy in the method of estimating the attendance at the baths in Manhattan, the New York Association for Improving the Condition of the Poor employed two watchers to record the number of persons entering the West Forty-first Street Bath during the week ending January 14, 1905. These watchers submitted their report under oath. Their affidavits are on file in the office of the Association. Their count included all persons seen to enter the baths during the hours in which the bath was open, namely, from 7 o'clock in the morning until 9 o'clock in the evening. All these persons may not have taken baths. Assuming that they did take baths, the following table will show the discrepancy between the actual count of these watchers and the reported official estimate of attendance, made by the attendant in charge.

ATTENDANCE WEST FORTY-FIRST STREET BATH, WEEK
ENDING JANUARY 14, 1905.

Date.			Actual Count.			Official Report.		
			7 to 2 o'clock	2 to 9 o'clock	Total.	7 to 2 o'clock	2 to 9 o'clock	Total.
Mon.	Jan.	9.....	20	49	69	107	219	326
Tues.	"	10.....	36	80	116	38	140	178
Wed.	"	11.....	40	85	125	51	203	254
Thurs.	"	12.....	38	61	99	61	235	296
Fri.	"	13.....	18	76	94	72	182	254
Sat.	"	14.....	62	124	186	150	352	502
Total for Week.....			214	475	689	479	1,331	1,810

On this showing the estimate of the attendants in charge exaggerated the attendance at this bath for this week by 1,121, or nearly 200 per cent, thereby affording ostensible justification for the large payroll.

On several other occasions a count was taken of the actual attendance at this bath and, also, at the Rivington Street Bath. The invariable result showed an over-estimated attendance in the official reports. It is believed that this is sufficient evidence of inaccuracy to warrant the provision of some means of recording the attendance with at least a reasonable degree of accuracy.

This accuracy might be secured by the installation of registering turnstiles, through which all incoming patrons should be directed. This would be facilitated by the provision of alleyways made with brass or wooden railings. In some of the baths the installation may not be practicable because of the narrow doors which lead from the waiting rooms into the bath rooms. An alternative method would be found in the use of duplicate checks, one being given to the incoming bather, and by him deposited in a receptacle on entering the bath room, and the other kept in the office. A third means of recording the attendance would be found in the use of a register similar to those in use on street cars for registering fares. This register would be operated by the attendant who is now stationed at the entrance to prevent the bathers carrying in paper or packages other than those containing towels. With one of these methods in use, the exaggeration of the daily attendance would be the fault of dishonest practice, rather than the consequence of ordinary fallibility of memory and, for that reason, less likely to occur.

Under the present administration of baths in Manhattan, the attendants in charge are permitted to exercise their own judgment with regard to the hour of closing the baths at night. Frequently, on investigation, it has been found that the baths were closed as early as eight o'clock in the evening during the months when the daily patronage was slight. At these times the baths open at 7 o'clock in the morning. By closing at 8 in the evening, the law which requires that the baths remain open no less than fourteen hours each day is violated. By leaving the hour of closing to the discretion of the attendants it is more likely that they will consult their own convenience than that they will regard the law or the rights of the community. This shortening of the hours during which the baths are open for the use of the public, serves to increase the cost per bather rather than to reduce it. The saving in light

and coal is insignificant. Against this slight saving must be charged the cost of permitting an expensive plant to remain idle, and the wages paid the employees for time during which they render no service in return.

Further than this, bathers who find the baths closed before the proper hour of closing are inclined not to return. This discouragement of patrons acts directly against the cultivation of the bathing habit and thus tends to defeat the prime purpose of establishing public baths. Attention to this illegal early closing has been called, from time to time, by the press, with the result that the proper hours were observed. This is a matter which, apparently, requires the constant vigilance of persons other than the present responsible official.

For thirty years the City of New York has maintained swimming baths during the summer months at various places along the water front. These baths are large wooden structures about 64 feet by 94 feet in dimension. The baths are floated on wooden compartments, and contain about 60 dressing rooms which are covered over and surround an open pool about 40 feet by 70 feet in area. This pool is provided with a wooden slat flooring through which the water flows. The average cost of these baths was approximately \$12,000.

At the present time the city owns twenty floating baths, five of which are located in Brooklyn and fifteen in Manhattan. It is estimated that over one million bathers use the baths in Brooklyn during the summer and double that number are reported to attend the fifteen Manhattan baths.

These floating baths have, in the past, provided a much-needed opportunity for swimming, especially to boys, during the hot months. It is, however, becoming increasingly difficult to find suitable locations for the floating baths in the rivers, because of the contamination of the water with sewage. Their maintenance, in salaries and repairs, involves a considerable expense. The average cost, per floating bath, in 1904, for Manhattan was \$4,107.23. The average cost per floating bath in Brooklyn was, for the same year, \$3,514.40. The cost of repairing the Manhattan baths was, for that year, \$10,665.05. With the increasing age of these floating baths the annual expenditures for repairs will doubtless exceed that amount.

Early in the fall these baths are towed to Brooklyn for storage until the following summer. In the spring they are repaired and towed back to their respective locations. A large

force of men is employed during the winter to 'watch' them. This watching cost the city, for the Manhattan baths alone, \$617.75 for the week ending November 18, 1905.

It is the general opinion that this form of bath is no longer practicable for New York City. Owing to the unwholesome conditions of the water in which they are necessarily placed, if they are to be used at all, it is believed unwise to continue their use for many more seasons. As a recreational feature they will be difficult to replace. To a large part of the population of New York the ocean is inaccessible. It is the realization of the need of some substitute for the floating baths that has lead the city to widen the scope of two of the new Manhattan baths by the installation of pools.

THE BUREAU OF SEWERS.

The organization of the bureau of sewers corresponds to the organization of the bureau of highways. The titular head of the bureau is the superintendent. As in the case of the bureau of highways, the superintendent is a purely political appointment and the present incumbent of the office is a Tammany Hall leader. The practical head of the bureau is the chief engineer, upon whom devolves the responsibility of maintaining and constructing sewers.

According to the annual report of the borough president for 1905, the mileage of sewers in Manhattan on December 31 of that year was 511.36, the number of catch basins being 6,181. The sewers are combination drains, that is, both rainfall and sewage are carried off through one conduit.

In the down-town section of the borough below Fourteenth Street, most of the sewers are very old, some of them having been built more than half a century ago. Notwithstanding the age of these sewers, it is asserted by the chief engineer of the bureau of sewers that they generally perform good service if kept clean and in good repair. If, however, a contractor, in the course of other sub-surface construction work, happens to disturb one of the ancient sewers, the walls are more than likely to crumble and fall in, owing to the deterioration of the cement.

It is obvious, therefore, that these sewers cannot be depended upon to last indefinitely. Sooner or later they must be reconstructed or replaced. The bureau of sewers has no fixed policy in this connection and the cost of general reconstruction has never been estimated by the borough president's engineers. The plan now pursued is to rebuild the down-town sewers as occasion demands, work being undertaken when there are complaints of inefficiency, or when sewers are in such a state of dilapidation that rebuilding is imperative. Should it become necessary to begin general reconstruction, engineers may have to resort to tunneling, for the down-town sewers are placed at an average depth of fourteen feet below

the surface, and are covered with a net work of pipes and conduits, which, in turn, are covered with expensive pavements. The problem of reconstructing sewers in the built-up portions of the city is closely related to the question of pipe galleries, previously discussed. A possible solution lies in the building of a combination pipe gallery and sewer.

The rebuilding of sewers is paid by the city as a whole, while the property holders benefited are assessed for alterations and new sewers. A considerable number of streets in Manhattan, particularly in the northern section of the island, are still unsewered. Many of these streets are unimproved. The chief engineer of the bureau of sewers believes it would be an economical policy to provide them with sewers before they are covered with costly pavements. To this policy objection is made by property owners who would be required to defray the cost of the construction.

THE MOST IMPORTANT DRAINAGE PROBLEM.

The most important drainage problem facing the bureau of sewers arises out of the derangement of the sewer system which will result from the building of new underground railways. The building of the first subway necessitated the readjustment of the sewer system all along its route. The work of improvement now in progress at the New York Central and the proposed Pennsylvania terminals disrupted the sewer system in their vicinity. The railroad companies have undertaken to restore the sewers disturbed by them, subject to the approval of the bureau of sewers, but in the work of rebuilding all water pipes and sewers have been crowded to the house lines, rendering them additionally inaccessible, and their future maintenance more costly.

The bureau of sewers disclaims responsibility for this condition on the ground that the work of reconstructing such sewers, particularly those disturbed by the Pennsylvania improvement, is actually done under the supervision of the rapid transit commission. In this connection a section of the Rapid Transit Law provides:

"Whenever the construction of any railway, depressed way, subway or tunnel under the provisions of this act shall interfere with, disturb or endanger any sewer, water pipe, gas pipe or other duly authorized sub-surface structures, the work of construction at such points shall be conducted in the City of New York in accordance with the reasonable requirements of the commissioner of public works."

It is asserted by the chief engineer of sewers that the words "reasonable requirements" give the commissioner of public works no authority over the acts of the rapid transit commission. In other words, according to this view, the commissioner must approve the plans adopted by the Rapid Transit engineers, even though they involve detriment to the drainage system.

While recognizing the gravity of this situation, the bureau of sewers has formulated no plans to obviate such conditions in the building of new subways. The chief engineer states, however, that in designing future subways, engineers in charge of the sub-surface works of the city, should be consulted to the end that the limited amount of space which is available for the underground pipe and drainage systems after the subways are built may be properly apportioned.

That this policy is rational and conforms to the obvious intention of the provisions of the Rapid Transit Law, above quoted, cannot be questioned. It is clearly incumbent upon the borough president to demand that no plans for future subways are approved that do not make adequate provision for the drainage system.





